

Exterior Lights, Headlight Dimmer, Turn Signals and Horns

GROUP
32

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PART 32-01 General Exterior Lights, Headlight Dimmer, Turn Signals and Horn Service

Wherever high or low series models are designated, high series indicates the LTD, XL and Country Squire on Ford models; and on Mercury models, high series indicates the Marquis, Brougham, Marauder and Marquis

Colony Park. All other Ford and Mercury models are low series.

Refer to the Wiring and Vacuum Diagrams Manual Form 7795P-70 for electrical schematic wiring diagrams, vacuum schematic diagrams and the

locations of wiring and vacuum harnesses and lines.

Refer to the Car Diagnosis Manual, Form FD 7962 for the diagnosis procedures.

PART 32-02 Headlight System

COMPONENT INDEX Applies To Models As Indicated	All Models	Ford	Mercury	Meteor	Cougar	Fairlane	Falcon	Maverick	Montego	Mustang	Lincoln- Continental	Thunderbird	Continental- Mark III
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N/A indicates that the item is not applicable to the vehicle(s) listed.

1 HEADLIGHTS

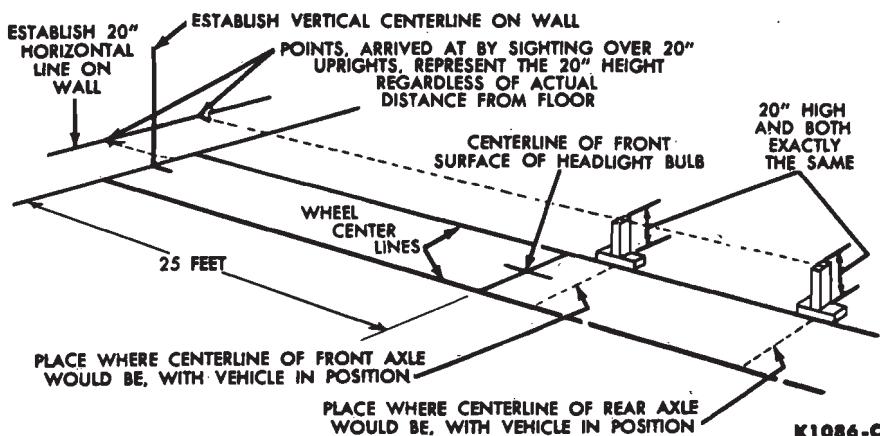


FIG. 1—Floor and Wall Layout

DESCRIPTION AND OPERATION

The Falcon, Maverick and Mustang use two No. 2 type sealed-beam headlights. Each light has low-beam and high-beam filaments.

On all other car lines, four sealed-beam headlights are used. The two outboard lights have two filaments each, one for low beam and one for high beam. The numeral 2 is molded

in the glass lens. Locating tabs molded in the glass allow the mounting of the No. 2 lights in the outboard headlight support frames only. The low beams are used for city driving, when meeting oncoming traffic on the highway, and for No. 2 headlight alignment.

The inboard headlights with a numeral 1 molded in the glass lens have only one filament. They are used for

highway driving, together with the high beams of the No. 2 headlights. Locating tabs molded in the glass allow the mounting of the No. 1 lights in the inboard headlight support frames only.

ALIGNMENT

All headlight adjustments should be made with a half-full tank plus or minus one gallon, the vehicle unloaded and the trunk empty except for the spare tire and jacking equipment, and recommended pressure in all the tires. Before each adjustment, bounce the vehicle by pushing on the center of both the front and rear bumpers, to level the vehicle. If the vehicle is equipped with the automatic load leveller device, operate the engine long enough (over 2 minutes) to charge the compressor reservoir before bouncing the vehicle to level it.

To align the vehicle headlights by means of a wall screen, select a level portion of the shop floor. Lay out the floor and wall as shown in Fig. 1.

Establish the headlight horizontal centerline by subtracting 20 inches from the actual measured height of the headlight lens center from the

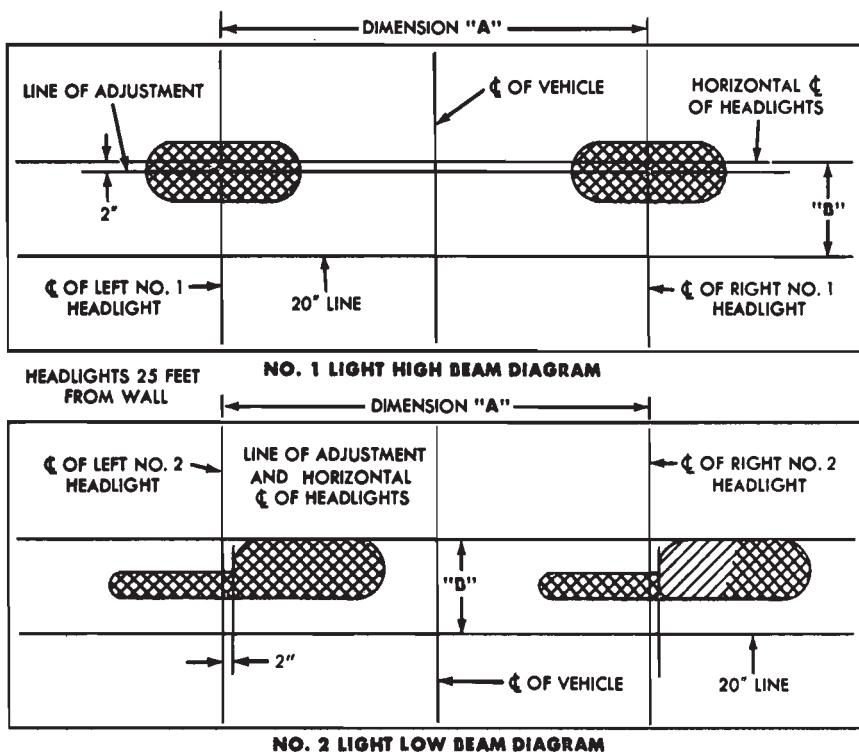


FIG. 2—Headlight Wall Screens

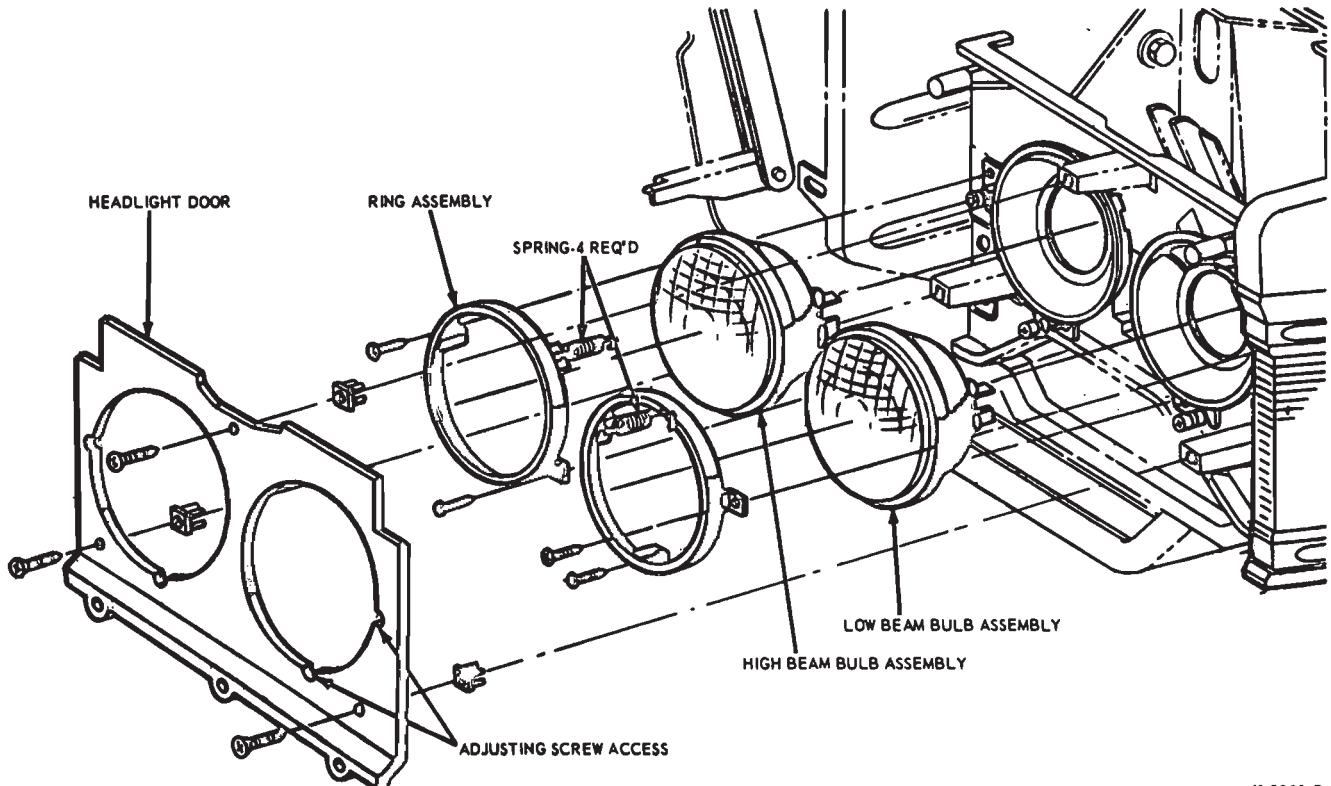
floor and adding this difference to the 20-inch reference line obtained by sighting over the uprights to obtain dimension B (Fig. 2). Draw a parallel horizontal line 2 inches below the headlight horizontal centerline. Then draw the headlight vertical centerlines on the screen as measured on the vehicle (dimension A, Fig. 2).

Each headlight can be adjusted by means of two screws located on the headlight adjusting ring (Figs. 3, 4 and 5). These illustrations are typical of all vehicle lines. On vehicles so equipped, the headlight doors do not have to be removed. Openings in the door provide access to the adjusting screws as shown in Fig. 3. Always bring each beam into final position by turning the adjusting screws clockwise so that the headlights will be held against the tension springs when the operation is completed.

To prevent binding when the adjusting screws are turned, apply a small amount of lubricant between the headlight housing and the adjusting ring.

NO. 1 HEADLIGHT HIGH BEAM ADJUSTMENT

Adjust each No. 1 headlight beam



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FIG. 3—Headlight Installation—Continental Mark III

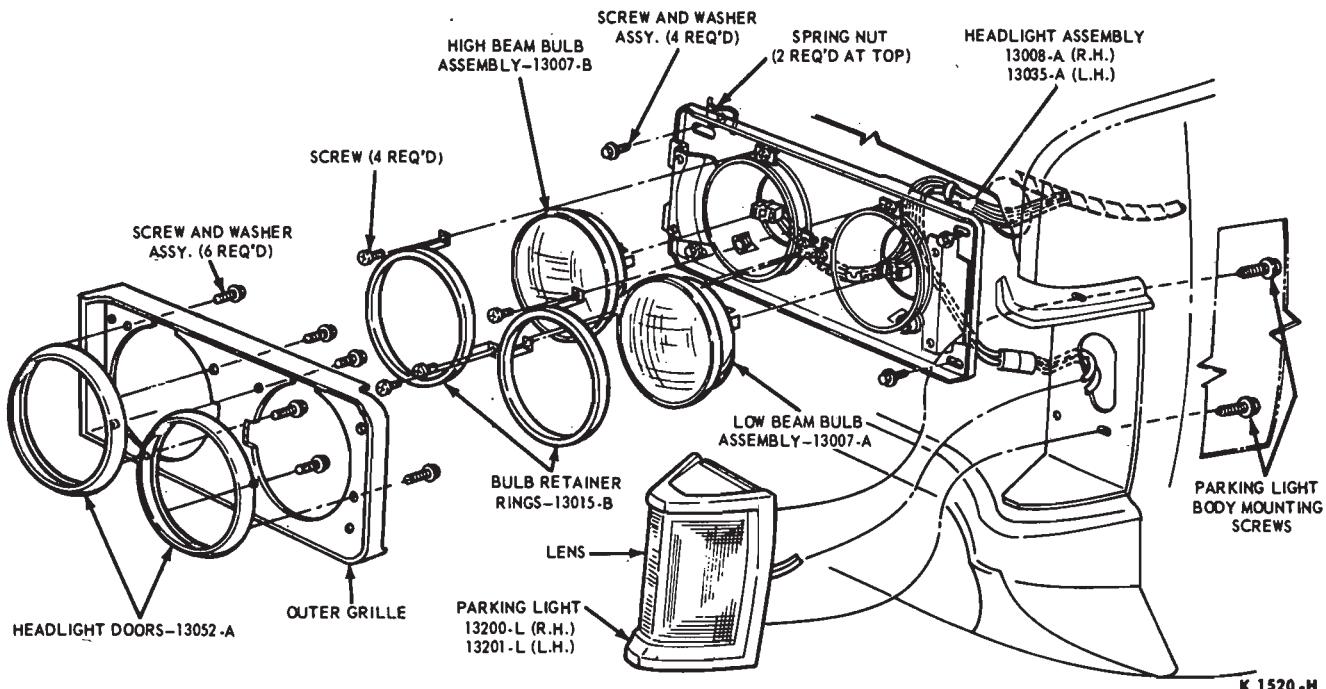


FIG. 4—Headlights and Parking Lights—Mercury Low Series and Meteor

(inner lights) as shown in Fig. 2. Cover the No. 2 lights when making this adjustment.

Some states may not approve of the 2-inch dimension for the No. 1 headlights. Check the applicable state law, as a 3-inch dimension may be required.

NO. 2 HEADLIGHT LOW BEAM ADJUSTMENT

To align the No. 2 headlights (outer lights), (only lights on Falcon, Maverick and Mustang) a different wall chart (lower diagram, Fig. 2) is used. Dimension B for the No. 2 lights is the same as B for the No. 1 lights. Dimension A is as measured on the car. Note that the line of adjustment of the No. 2 lights is the horizontal centerline of the No. 2 lights. Turn the headlights to low beam and adjust each No. 2 light as shown in Fig. 2.

REMOVAL AND INSTALLATION

VEHICLES EQUIPPED WITH HEADLIGHT COVERS

The headlight covers must be kept open while the bulbs are being replaced. To open the covers for access to the bulbs, disconnect the battery ground cable and pull the headlight switch to the ON position. The bulbs

can now be removed as described below under Removal and Installation.

MERCURY LOW SERIES AND METEOR

The radiator outer grille and headlight door assembly must be removed first. In order to remove the outer grille on the left side, it is necessary first to remove the clip from the hood latch release rod and position the rod out of the way.

If the headlight door (chrome trim ring) is to be replaced, remove the door-to-grille screws from the rear side of the grille (Fig. 4).

With the outer grille removed, the headlight bulb(s) can be removed as described below under Removal and Installation.

HEADLIGHT REMOVAL AND INSTALLATION— ALL VEHICLES

1. If the vehicle is equipped with headlight covers, close the by-pass valve to raise the covers for access to the headlight. On models so equipped, remove the headlight door retaining screws and remove the headlight door (Figs. 3, 4 and 5). These illustrations are typical of all vehicle lines.

2. On all except Maverick, unhook the spring from the tab on the bulb

retainer ring while holding a hand over the headlight assembly to steady it. Remove the two retainer ring screws and remove the retainer ring from the headlight bulb.

3. On Maverick vehicles, loosen but do not remove the three screws that hold the bulb retainer ring to the adjusting ring (Fig. 5). Rotate the retainer ring so as to disengage the ring from the screws.

4. Pull the headlight bulb forward and disconnect the wiring assembly plug.

5. Connect the wiring assembly plug to the new headlight bulb and place the bulb in position, locating the bulb glass tabs in the positioning slots.

6. On all except Maverick attach the bulb retainer ring to the assembly with the two retainer ring screws. Hook the spring to the tab of the retainer ring.

On Maverick vehicles, position the retainer ring over the bulb and rotate the ring so that the slots engage the screws. Tighten the screws.

7. Check and adjust the alignment of the new headlight bulb, as required.

8. On models so equipped, place the headlight door in position and install the retaining screws. If equipped with headlight covers, open the by-pass valve to lower the covers.

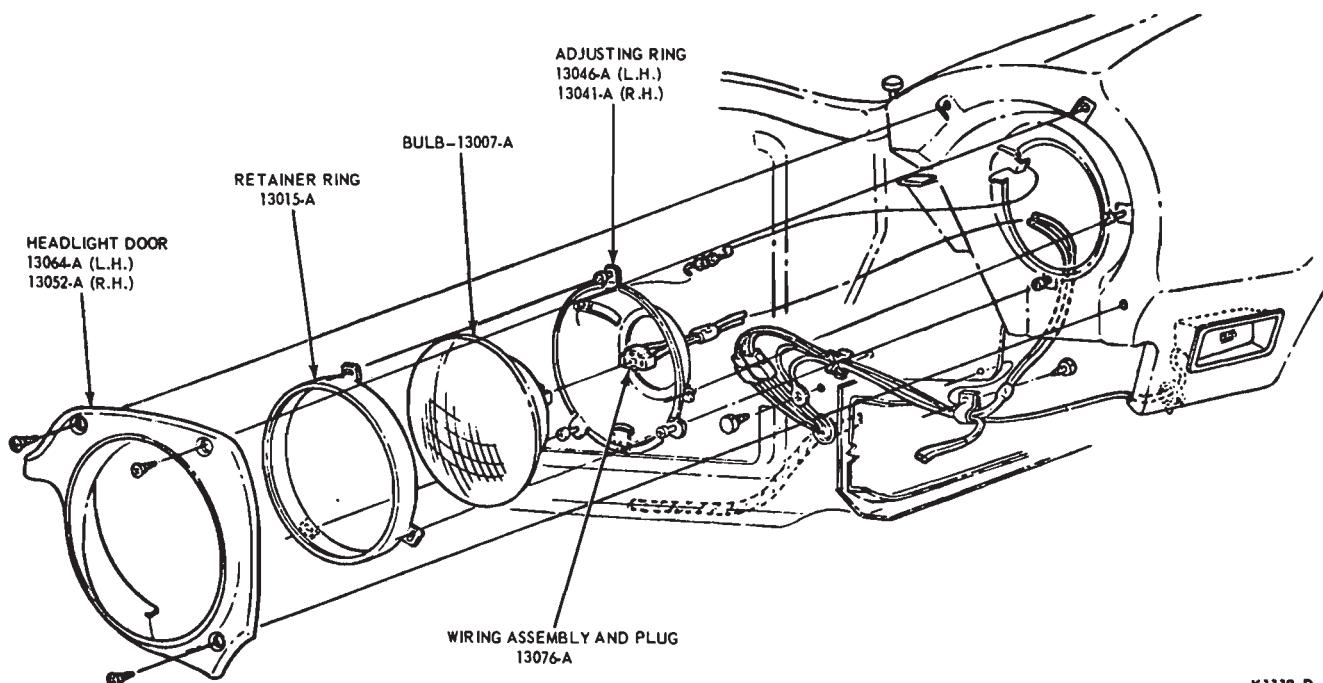


FIG. 5—Maverick Headlight Installation

2 HEADLIGHT SWITCHING SYSTEM

DESCRIPTION AND OPERATION

HEADLIGHT-ON BUZZER

A headlight-ON indicator light and buzzer system is provided on Ford, Mercury, Meteor, Thunderbird and Continental Mark III vehicles to tell the driver that he has left his headlights on.

The indicator light, which contains a built in flasher and an indicating buzzer, are connected in parallel between the headlight switch and a relay. The relay connects the indicating circuit to ground. The relay is energized by current through the door jamb switch.

HEADLIGHT SWITCH EXCEPT MERCURY

A combination three-position lighting switch (Fig. 6), mounted at the lower left of the instrument panel, controls circuits to the headlights, parking lights, marker lights, taillights, license plate light, courtesy lights and instrument panel lights. An 18-ampere circuit breaker in the switch protects the headlight circuit. A 15-ampere circuit breaker in the switch protects the circuits for the taillights,

A 15-ampere circuit breaker in the switch protects the circuits for the taillights, license plate light, parking lights and marker lights.

On vehicles equipped with headlight covers, the distribution valve for the vacuum system is an integral part of the lighting switch. It is attached to

The instrument panel light circuit is routed through a rheostat on the switch, which is controlled by rotating the switch control knob.

The courtesy light switch is also a part of the lighting switch. It is actuated by rotating the switch control knob to the maximum counterclockwise position. The courtesy lights also illuminate when the doors are opened, by the switch in the pillar.

HEADLIGHT AND COURTESY LIGHT SWITCHES—MERCURY

A new, rocker type, three-position lighting switch (Fig. 8), mounted at the lower left of the instrument panel, controls circuits to the headlights, parking lights, marker lights, taillights and license plate lights. An 18-ampere circuit breaker in the switch protects the headlight circuit. A 15-ampere circuit breaker in the switch protects the circuits for the taillights,

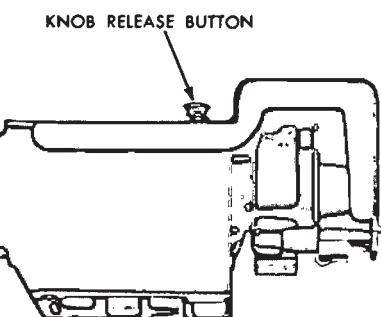


FIG. 6—Headlight Switch

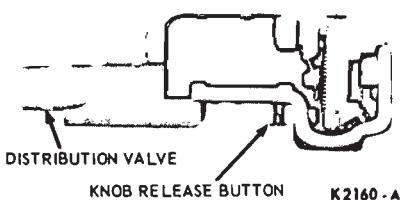
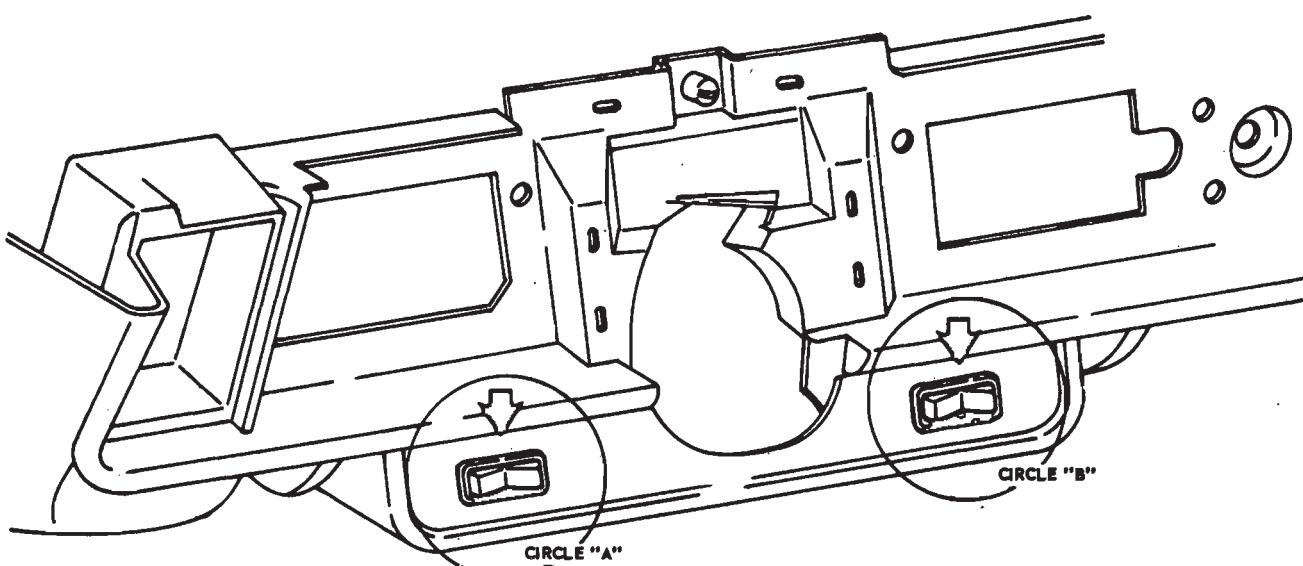


FIG. 7—Headlight Switch With Distribution Valve

license plate light, parking lights and marker lights.

On vehicles equipped with headlight covers, the distribution valve for the

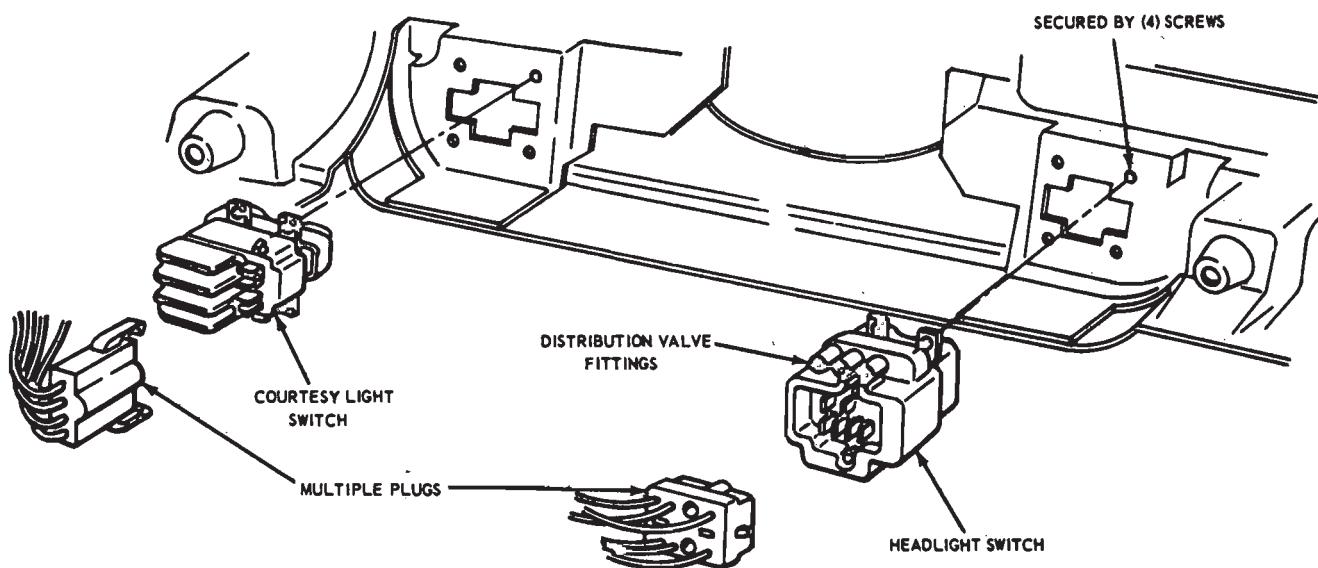


* INDICATES DEGREE OF BRIGHTNESS
FOR INSTRUMENT PANEL LIGHTS



HEADLIGHT SWITCH
VIEW IN DIRECTION OF ARROW -
CIRCLE "A"

COURTESY LIGHT SWITCH
VIEW IN DIRECTION OF ARROW -
CIRCLE "B"



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FIG. 8—Mercury Headlight and Courtesy Light Switches

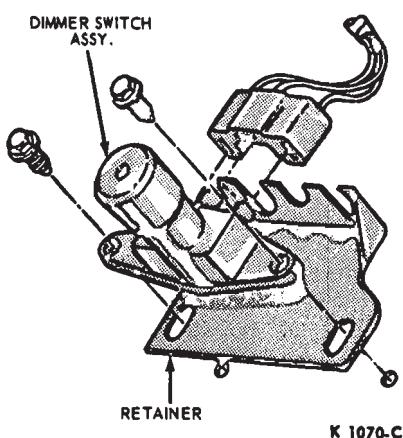


FIG. 9—Headlight Dimmer Switch Installation

vacuum system is an integral part of the lighting switch. It is attached to the back of the switch body (Fig. 8). Operation of the headlight switch is from left to right in three detents OFF, PARKING LIGHTS and HEADLIGHTS ON as shown.

The instrument panel and courtesy lights are controlled by a similar rocker type switch at the lower right of the instrument panel. Operation is from left to right in four detents. The first three detents operate only the instrument panel lights and control their degree of brightness. At the furthest detent, the dome light and all courtesy lights subject to operation by the door jamb switch will come on.

The instrument panel lights will operate only when the headlight switch is closed. However, even when the headlight switch is open, pushing the courtesy light switch to its furthest detent will turn on the courtesy lights.

REMOVAL AND INSTALLATION

BUZZER SYSTEM

Components should be replaced as indicated by diagnosis procedures.

The indicator light is located in the safety convenience panel. The buzzer is mounted under the instrument

panel to the right of the steering column. The relay (Ford, Mercury and Meteor only) is mounted under the instrument panel to the left of the steering column. The relay on the Thunderbird and Continental Mark III is mounted under the instrument panel in back of the glove box.

HEADLIGHT DIMMER SWITCH

To remove the headlight dimmer switch, pull the floor carpet back from the area of the switch and remove the mounting screws (Fig. 9). In some vehicles, it may be necessary to loosen the scuff plate and remove the left cowl panel in order to free the carpet. Disconnect the three-wire connector (or the multiple connector and single wire connector, if equipped with automatic headlight dimmer) from the switch. To install the switch, connect the wire connector(s) to the switch terminals and install the switch to the floor. Replace the floor carpet.

HEADLIGHT SWITCH EXCEPT MERCURY

Removal

1. Disconnect the battery ground cable.
2. On Mustang and Cougar vehicles, remove two screws and lower the parking brake and air control.

3. Turn the control knob to the full ON position. Reach up from underneath the instrument panel, and press the release button on the switch housing (Figs. 6 and 7). With the release button pressed in, pull the knob out of the switch. To gain access to the release button on Maverick vehicles equipped with air conditioning, disconnect the A/C left duct from the duct-to-register connector, loosen the two nuts that retain the left register to the utility shelf, and then remove the connector from the register. See Part 34-05 for illustrations.

4. Unscrew the bezel nut with Tool T65L-700-A to detach the switch assembly from the instrument panel.

and lower the switch assembly.

5. Disconnect the multiple plug to the switch. Also disconnect the three vacuum hoses if the vehicle is equipped with headlight doors. Remove the switch from the vehicle.

Installation

1. Connect the multiple plug to the headlight switch. If equipped with headlight doors, install the color-coded vacuum hoses to the distribution valve fittings identified by corresponding colors. Make sure that all connections are tight.

2. Position the switch to the instrument panel and install the bezel nut with Tool T65L-700-A.

3. Install the knob and shaft assembly by inserting it all the way into the switch until a distinct click is heard. In some instances, it may be necessary to rotate the shaft slightly to engage it.

4. On Mustang and Cougar vehicles, position the parking brake and air control and install the two retaining screws.

5. Connect the battery ground cable and check the operation of the switch.

HEADLIGHT AND COURTESY LIGHT SWITCHES—MERCURY

To remove either switch, disconnect the battery ground cable. From behind the instrument panel, disconnect the multiple plug to the switch. When removing a headlight switch from a vehicle equipped with headlight doors, also disconnect the three vacuum hoses. Remove the four retaining screws and pull the switch out from behind the instrument panel (Fig. 8).

When installing either switch, position it to the instrument panel from the rear and secure it with the retaining screws. On headlight switches so equipped, install the color coded vacuum hoses to the distribution valve fittings identified by corresponding colors. Make sure that all hose connections are tight.

PART 32-03 Parking Lights, Side Marker Lights and Rear Lights

COMPONENT INDEX Applies To Models As Indicated	All Models	Ford	Mercury	Meteor	Cougar	Fairlane	Falcon	Maverick	Montego	Mustang	Lincoln- Continental	Thunderbird	Continental- Mark III
BACK-UP LIGHTS													
Description and Operation		03-07	03-07	03-07	03-09	03-10	03-09	03-09	03-10	03-08	03-12	03-13	03-12
Removal and Installation		03-07	03-07	03-07	03-09	03-10	03-09	03-09	03-10	03-08	03-12	03-13	03-12
CORNERING LIGHTS	03-05												
Description and Operation													
Removal and Installation		03-05	03-05	N/A	N/A	03-05	03-05	03-05	03-05	N/A	03-05	03-05	N/A
LIGHT BODY REMOVAL AND INSTALLATION		03-03	03-02	03-02	03-03	03-02	03-03	03-03	03-02	03-03	03-01	03-03	03-01
PARKING LIGHTS-FRONT	03-01												
Description and Operation													
Removal and Installation		03-03	03-02	03-02	03-03	03-02	03-03	03-03	03-02	03-03	03-01	03-03	03-01
SIDE MARKER LIGHTS-FRONT	03-04												
Description and Operation													
Removal and Installation		03-05	03-05	03-05	03-06	03-05	03-05	03-05	03-05	03-06	03-06	03-05	03-04
SIDE MARKER LIGHTS-REAR	03-04												
Description and Operation													
Removal and Installation		03-07	03-07	03-07	03-07	03-07	03-07	03-07	03-07	03-07	03-07	03-07	03-07
SPORT LIGHTS	03-06												
Description and Operation													
Removal and Installation		N/A	N/A	N/A	03-06	N/A	N/A	03-06	03-06	N/A	N/A	03-06	N/A
SUPPLEMENTAL STOPLIGHT													
Description and Operation		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	03-13	N/A
Removal and Installation		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	03-13	N/A
TAIL AND STOPLIGHTS													
Description and Operation		03-07	03-07	03-07	03-09	03-10	03-09	03-09	03-10	03-08	03-12	03-13	03-12
Removal and Installation		03-07	03-07	03-07	03-09	03-10	03-09	03-09	03-10	03-08	03-12	03-13	03-12

A page number indicates that the item is for the vehicle(s) listed at the head of the column.
N/A indicates that the item is not applicable to the vehicle(s) listed.

1 FRONT PARKING LIGHTS

On Continental Mark III, Mercury Low Series and Meteor vehicles, the light is located on the forward edge of the front fender in such a way that it serves as both a parking/turn signal light and a side-marker light.

LINCOLN CONTINENTAL

The front parking lights are mounted on brackets which are welded to the rear side of the front bumper adjacent to openings in the bumper (Fig. 1). The light body must be removed first in order to replace the bulb. Remove the light body-to-bracket screw and washer assemblies, disconnect the lead wire at the bullet connector be-

hind the side marker light and lower the light body and lead wire assembly from behind the bumper. Remove the lens (two retaining screws) and replace the bulb.

When installing the light body to the mounting bracket, be sure that the spring nuts are properly positioned at the screw holes on the bracket.

CONTINENTAL MARK III

BULB REMOVAL AND INSTALLATION

To replace the bulb in the parking-/front marker light at the front of

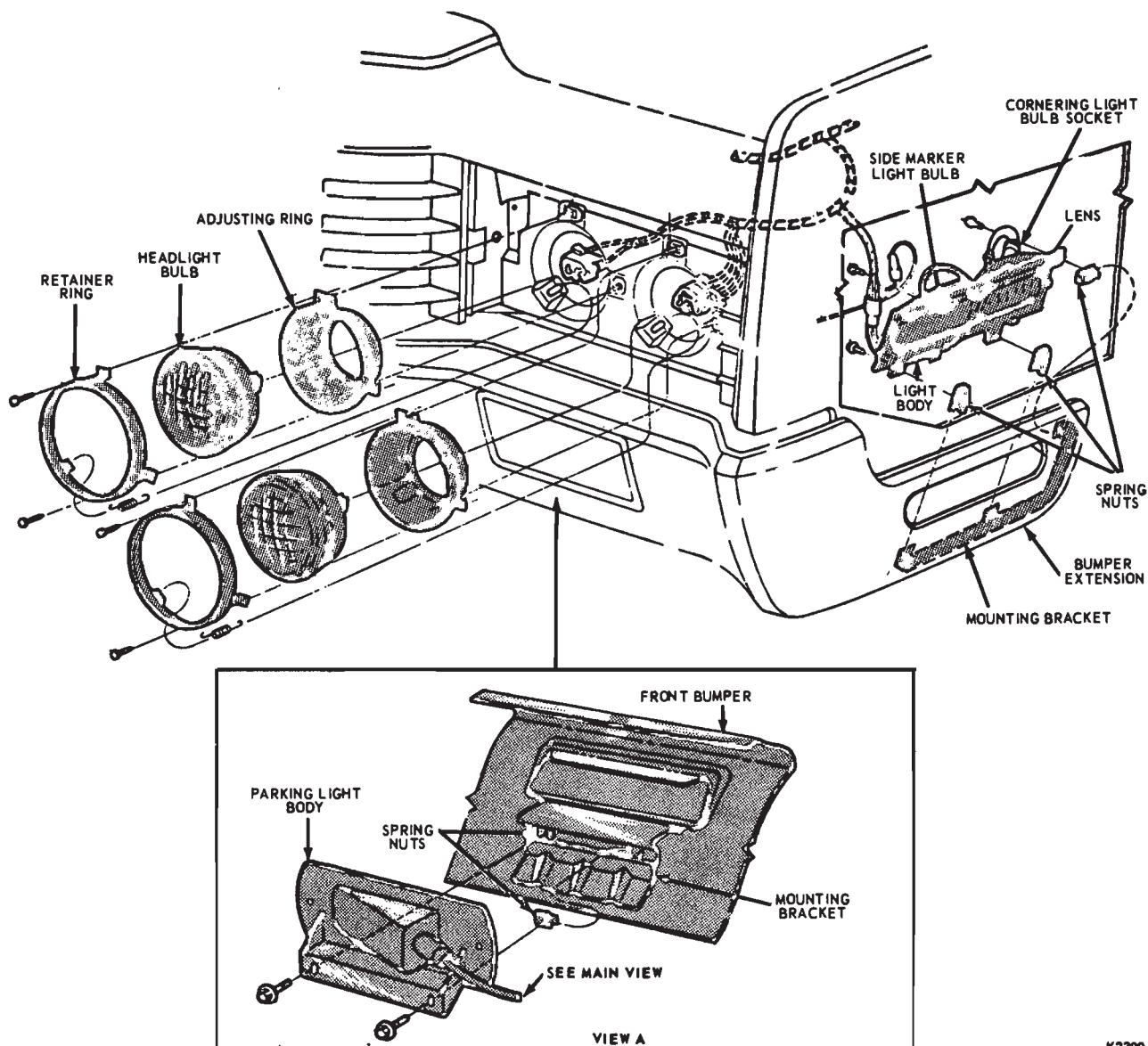
each fender, remove the lens retaining screws and remove the lens. Replace the bulb and install the lens with the retaining screws.

LIGHT BODY REMOVAL

1. Disconnect the parking light multiple connector from the dash-to-headlight junction wiring assembly under the top of the fender behind the radiator support structure. Disengage the parking light wiring locator.

2. Remove the two retaining nuts from the light body studs at the panel outboard of the headlight support structure (Fig. 1).

3. Pull the light body straight for-



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FIG. 1—Headlight, Front Parking Light and Side Marker and Cornering Light—Lincoln Continental

ward and remove it from the vehicle. Remove the pad from the rear of the light body.

4. Remove the lens retaining screws, and remove the lens and gasket. Remove the bulb.

LIGHT BODY INSTALLATION

1. Install the bulb in the socket of the light body. Position the lens and gasket to the light body, and install the retaining screws. Fit the pad into position over the studs and against the rear of the light body.

2. Position the light body to the fender, routing the light wiring through the holes in the front sheet metal. Install the two retaining nuts to the light body studs.

3. Engage the wiring locator tab in

the hole provided, and connect the multiple connector.

FAIRLANE AND MONTEGO

The Montego front parking lights are located in two openings in the front bumper. To replace a bulb, remove the light body from the rear side of the bumper (two retaining screws), and then remove the lens and gasket from the light body (two retaining screws). The bulb can now be replaced (Fig. 2).

The Fairlane front parking light is located in the lower extension of the bumper. It is not necessary to remove the light body to remove the bulb. Just remove the lens.

To remove the light body, remove the body-to-bumper retaining screws

and disconnect the lead wire at the connector plug. If the light body is being replaced, transfer the bulb to the new body.

MERCURY LOW SERIES AND METEOR

The bulb can be replaced by removing the parking light door and lens (Fig. 4, Part 32-02) from the front of the assembly.

The outer sealed beam headlight bulb will have to be removed for access to the parking light body mounting screws behind the fender. See Headlight Bulb Replacement, Part 32-02. The parking light body can now be removed by reaching through the headlight bulb opening, disconnecting the connector plug and re-

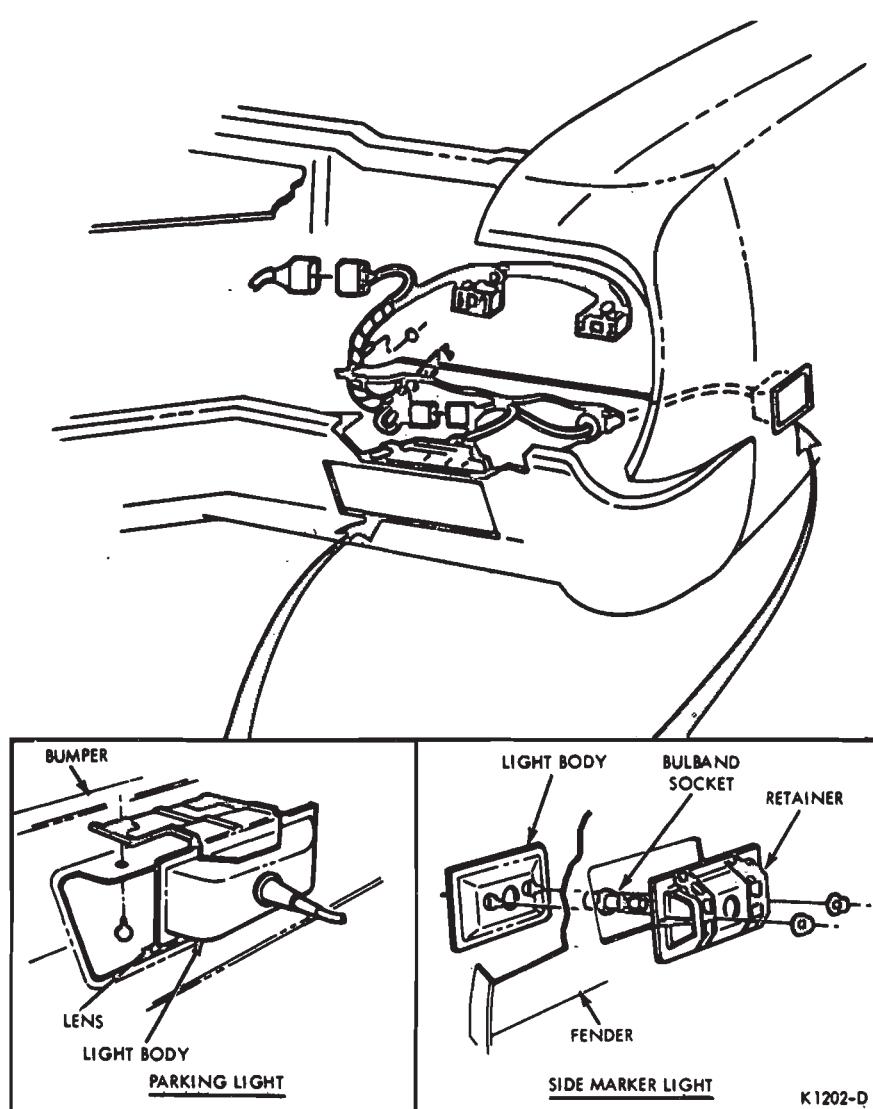


FIG. 2—Front Parking and Side Marker Light Installation—Montego, Typical of Fairlane, Ford and Mercury Hi-Series

moving the mounting screws.

MERCURY HIGH SERIES

The front parking lights are located in two openings in the front bumper. The bulb can be replaced by removing the parking light door and lens from the front.

The parking light body can be removed from underneath the front bumper by disconnecting the lead at the connector plug and removing the mounting nuts.

FORD AND MUSTANG

The front parking lights are located in two openings in the front bumper. The bulb can be replaced by removing

the lens from the outside.

The lead wire on the Ford is secured by retaining clips and connects to a plug behind the radiator support. The lead wire on the Mustang connects to a plug directly behind the light body. The light body is mounted by a bracket to the upper side of the bumper opening. Remove the light body and lead wire from underneath the vehicle after disconnecting the wire at the plug, disengaging it from the clips, and removing the mounting screws.

COUGAR

The front parking lights are mounted in openings in the bumper lower extension panel. The bulb can be re-

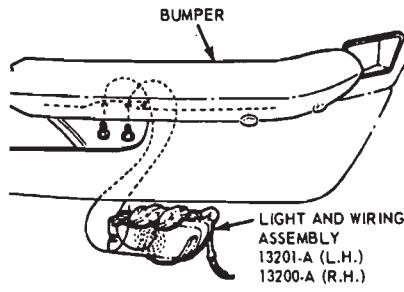


FIG. 3—Maverick Front Parking and Turn Signal Light Installation

placed by removing the door and lens from the front.

To remove the light body it is first necessary to disengage the lead wire locator and then disconnect the wire at the connector plug. Remove the mounting nuts and remove the body from under the bumper.

FALCON

To replace the bulb, remove the lens retaining screws and the lens.

1. Open the hood and disconnect the parking light connector along the fender apron, and push the grommet and feed wire through the fender apron.

2. Remove the feed wire from the two retaining clips under the fender.

3. Remove the two screws retaining the parking light assembly to the bumper.

4. Remove the two screws retaining the lens to the parking light body and remove the lens, gasket, and bulb from the body.

5. Position the bulb, gasket, and lens to the light body and install the two retaining screws.

6. Position the light assembly to the bumper and install the two retaining screws.

7. Route the feed wire through the opening in the fender apron. Insert the grommet in the fender apron opening and connect the connector. Position the feed wire in the retaining clips under the fender.

8. Close the hood and check the operation of the light.

MAVERICK

To replace the bulb, it is necessary first to remove the two light body-to-bumper retaining screws and lower the body from the bumper (Fig. 3). Remove the lens from the light body (2 attaching screws) and remove the

bulb from the socket.

To replace the light body, disconnect the parking light lead at the connector plug located between the radiator support and the bumper. Free the lead from two retaining-clips by opening one clip and disengaging it from the other clip. Remove the two light body-to-bumper retaining screws, and remove the light body and wiring as-

sembly from the vehicle.

When installing a new light body, transfer the lens (2 screws) and bulb to the new body and install a new gasket.

THUNDERBIRD

The light body must be removed first in order to replace the bulb. Re-

move the light body-to-bumper attaching screws, disconnect the lead wire from the connector at the grommet, and lift out the entire assembly from underneath the fender.

Remove the spring nuts from the studs at the rear side of the light body, separate the door and lens assembly from the body. The bulb is now accessible for replacement.

2 SIDE MARKER LIGHTS

On Continental Mark III, Mercury Low Series and Meteor vehicles, the front side marker light is located on the forward edge of the front fender in such a way that it serves as both a parking/turn signal light and a side-marker light. These combination lights are covered in Section 1 of this Part.

On Continental Mark III vehicles as well as on station wagons (Model 71) in the Ford, Meteor and Mercury vehicle lines, the rear side marker light is located on the rear edge of the rear fender in such a way that it serves as a combination of either a taillight or a back-up light with a side marker light. See Section 3 of this Part.

The information in this section covers vehicles with separate side marker light installations.

DESCRIPTION AND OPERATION

Separate front and rear side marker lights on all 1970 vehicles are connected to both the parking light and the turn signal/emergency flasher circuits in such a way that they will flash with the parking lights during turn signal or emergency flasher operation.

NORMAL RUNNING CONDITION—HEADLIGHT SWITCH ON

In this situation, the headlight switch is pulled out to either the first detent (parking light only ON) or the second detent (parking light and headlight ON).

The side marker lights are connected in parallel with the feed circuit (from the headlight switch) that feeds the minor filaments of the front parking and rear lights (Fig. 4). Each of the four side marker lights (two on

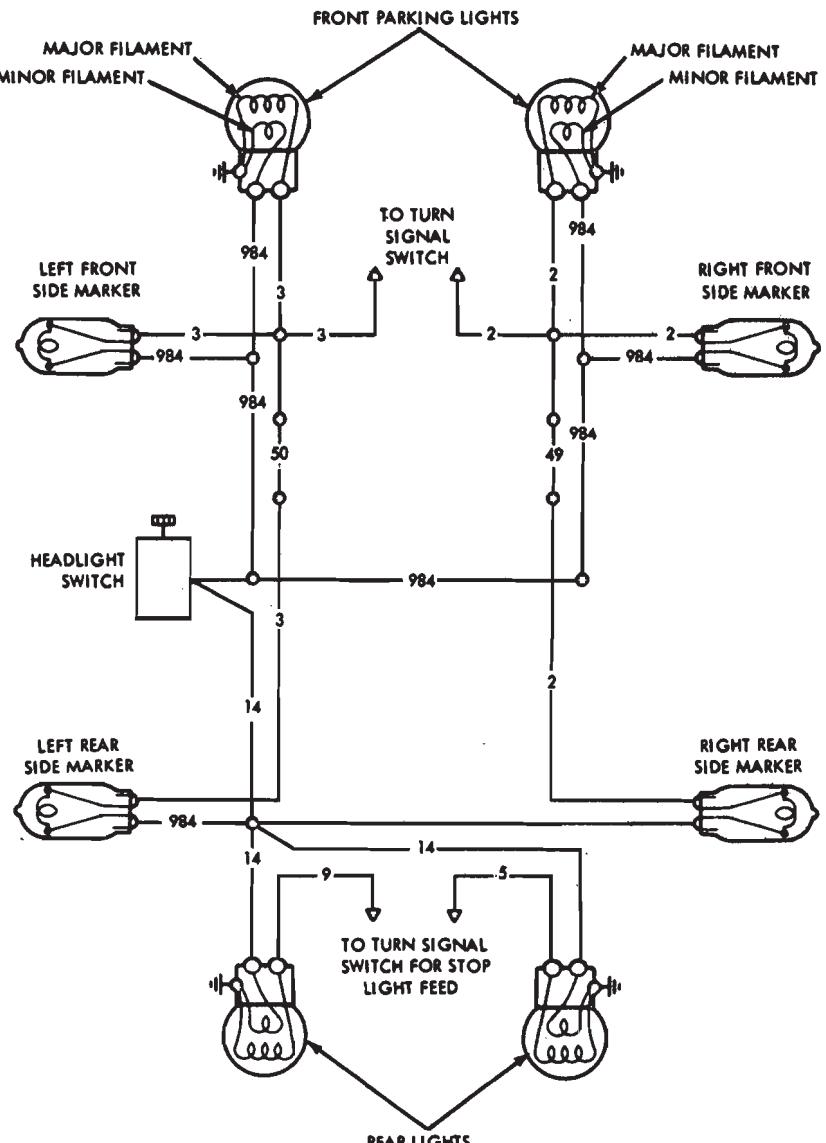


FIG. 4—Typical Side Marker Light Circuit

I K1209-B

each side) completes its circuit to ground through the dormant major filament of its respective left or right

front parking light. Therefore the side markers glow with the parking lights.

TURN SIGNAL OPERATION—HEADLIGHT SWITCH ON

The side markers are on when the parking light major filament is dormant providing a ground as described in the foregoing. When the turn signals are activated however, the major filament of the turn-side parking light is fed intermittently for turn signal operation. This intermittent feed interrupts the side marker lights' circuit to ground causing them to go off. As a result the affected side markers for the direction of turn selected will flash alternately with the front parking/turn signal lights.

The side markers on the opposite (non-turning side) will continue to glow steadily.

EMERGENCY FLASHER OPERATION—HEADLIGHT SWITCH ON

The operation is the same as with turn signal operation described in the foregoing except that the emergency flasher sends intermittent power to the major filaments in both parking lights, thus interrupting the ground circuits of all four side markers. As a result, all four side markers will flash alternately with the parking lights.

TURN SIGNAL OPERATION—HEADLIGHT SWITCH OFF

The turn signal system supplies an intermittent feed to the major filament of the turn-side parking light as described in the foregoing. The same circuit also supplies an intermittent feed to the side marker lights (on the turn side) but flowing in a reverse direction from that supplied by the headlight switch when it was on. The two side marker lights complete their circuit to ground through the dormant minor filament of the turn-side parking light. Thus the side markers and front parking lights flash simultaneously with each intermittent feed (Fig. 4).

The lights on the opposite side remain off.

EMERGENCY FLASHER OPERATION—HEADLIGHT SWITCH OFF

The operation is the same as with turn signal operation described in the foregoing except that the emergency flasher system sends intermittent

power to the parking and side marker lights on both sides. All the lights will flash simultaneously.

CORNERING LIGHT OPERATION

On Thunderbird and Lincoln Continental vehicles, a cornering light bulb is installed in the same light body with the side marker bulb. The cornering lights are fed from the turn signal circuit in such a way that when the turn signal switch is activated, the cornering light on the turn side will burn with a steady glow.

FRONT SIDE MARKER AND CORNERING LIGHT REMOVAL AND INSTALLATION

FALCON, MAVERICK, FAIRLANE, MONTEGO, FORD HIGH SERIES AND MERCURY

To replace the bulb, reach behind the fender and disengage the bulb socket from the light body by turning the socket counterclockwise. Remove the bulb from the socket.

To replace the light body, disengage the bulb socket, remove two retaining nuts and remove the light body from the outside of the fender and the retainer from behind the fender (Fig. 2). Position the original retainer and gasket to the inner side of the fender, position the light body

from the outside of the fender so that the studs enter the holes in the retainer, and secure the body and retainer to the fender with the retaining nuts. Install the bulb and socket to the light body and turn the socket clockwise to engage it to the body.

If the bezel on the Mercury High Series is to be replaced, first remove the light body and retainer as described in the foregoing. Then remove the bezel retaining nuts from the inner side of the fender and pull off the bezel from the outside.

THUNDERBIRD

The cornering light bulb is installed in the forward end and the side marker light bulb is installed in the rear end of the light body which is mounted to a bracket on the inner side of the front fender (Fig. 5).

Bezel, Lens, and Cornering Light Bulb

The cornering light bulb can not be removed without first removing the bezel and the lens. From behind the fender, remove the two bezel-to-fender retaining nuts and withdraw the bezel from the outside (Fig. 5). Remove the lens (six retaining screws) from the outer side of the light body. Remove the bulb from the socket and install a new one. After replacing the lens, install the bezel with the studs

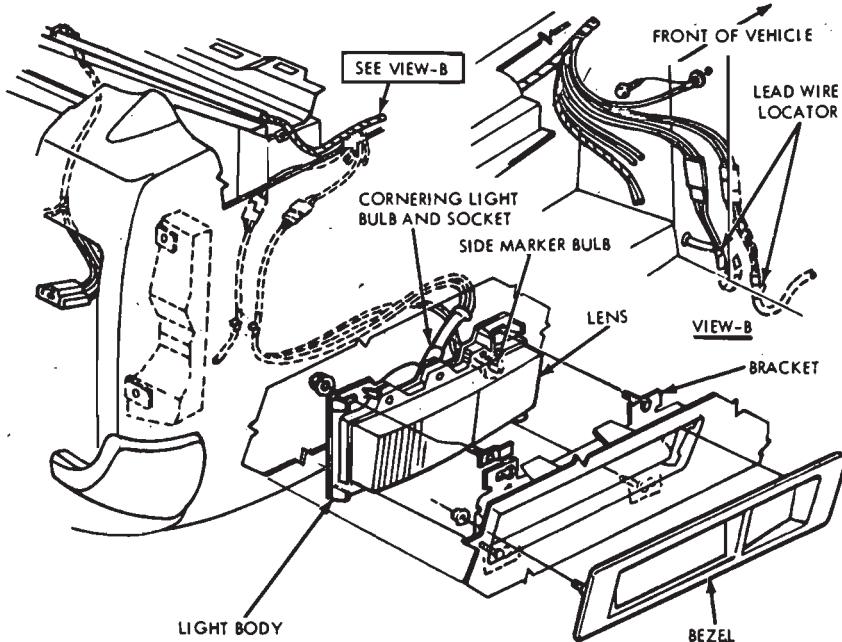


FIG. 5—Front Side Marker and Cornering Light Installation—Thunderbird

K1208-B

entering the screw holes from the outer side of the fender and secure it in place by installing the retaining nuts to the studs at the inner side of the fender.

Side Marker Light Bulb

To replace a side marker light bulb, reach behind the fender and disengage the bulb socket from the light body by turning the socket $\frac{1}{4}$ turn counterclockwise (Fig. 5). Remove the bulb from the socket and install a new one.

Light Body

To remove the light body, first disengage the lead wire locator from the locator hole and disconnect the lead wires at the multiple connector. Remove the light body-to-bracket attaching nuts, and lower the light body and lead wire assembly out from behind the fender (Fig. 5).

If the light body is being replaced, remove the lens (six retaining screws) and transfer the bulbs to the new body.

Before installing the light body to the mounting bracket, be sure that the four clip and stud assemblies are properly positioned in the bracket tabs. After connecting the lead wires at the multiple plug, be sure that the lead wire locator is engaged in the locator hole.

LINCOLN CONTINENTAL

The side marker light bulb is installed in the front end and the cornering light bulb is installed in the rear end of the light body which is mounted to a bracket on the inner side of the bumper extension (Fig. 1).

Light Bulbs

To replace the side marker light bulb, reach behind the bumper extension and disengage the bulb socket from the light body by turning the socket $\frac{1}{4}$ turn counterclockwise. Remove the bulb from the socket.

To replace the cornering light bulb, first remove the light body from the mounting bracket and remove the lens from the light body as described in the following procedure.

Light Body

To remove the light body, disconnect the lead wires at the multiple connector, remove the light body-

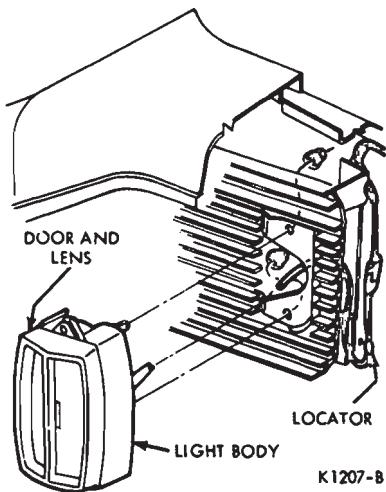


FIG. 6—Typical Sport Light Installation—Thunderbird Shown

to-mounting bracket screws, and lower the light body and lead wire assembly out from behind the bumper extension (Fig. 1). Remove the lens from the body (six retaining screws). The cornering light bulb can now be replaced. If the light body is being replaced, transfer both bulbs to the new light body.

Before installing the light body to the mounting bracket, be sure that the spring nuts are properly positioned in the bracket tabs.

MUSTANG AND COUGAR

To replace the bulb, reach behind the fender and disengage the bulb socket from the light body by turning the socket counterclockwise. Remove the bulb from the socket.

To replace the light body disengage the socket and remove the light-to-fender mounting nuts from behind the fender.

SPORT LIGHTS

DESCRIPTION AND OPERATION

Sport (grille) lights are available for Thunderbird, Montego, Cougar and Maverick vehicles. They are mounted at the left and right side of the radiator grille (Fig. 6). The sport lights are tied into the parking light circuit and are controlled by the headlight switch. When the switch is pulled out to the first detent, only the parking lights come on. When the switch is pulled to the second detent, the headlights, parking lights and sport lights all come on. The parking

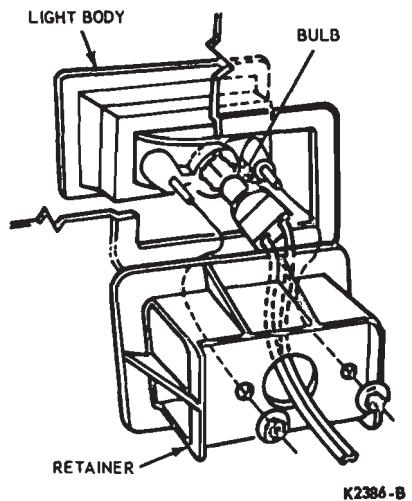


FIG. 7—Rear Side Marker Light Installation

lights also function as turn signal and emergency flashers. The sport lights do not flash.

REMOVAL AND INSTALLATION

To replace the bulb, the door and lens assembly must be removed from the front side of the light body (two retaining screws).

To remove the light body, disconnect the lead wires at the connector plug, disengage the wire locator from its hole and remove the mounting nuts from behind the grille (Fig. 6). The assembly can now be pulled out from the front of the grille.

REAR SIDE MARKER LIGHT REMOVAL AND INSTALLATION

The side marker light on the Lincoln Continental is installed in the forward extension of the rear bumper.

On all other passenger car lines, a retainer type side marker light is mounted on the outer side of the fender with its studs entering a retainer on the inner side.

LINCOLN CONTINENTAL

To replace the bulb, remove the lens (2 retaining screws), and remove the bulb from the socket (Fig. 13).

To remove the light body, remove the back bumper as outlined in Part 48-03. Remove the retaining nuts and washers from the studs behind the bumper and withdraw the light body from the outer side (Fig. 13).

During installation after entering the studs into the holes in the bump-

er, be sure to install the washers on the studs before installing the retaining nuts.

RETAINER TYPE—ALL EXCEPT LINCOLN CONTINENTAL

On the inside of the Thunderbird luggage compartment left side only, a shield is attached to the interior trim panel so that it covers the retainer. This shield has to be removed (two retaining screws) for access to the Thunderbird left side marker. For all other retainer-type rear side marker

lights, remove the lower rear corner of the trim panel in the luggage compartment for access.

Bulb Removal and Installation

Remove the bulb socket from the light body by turning it $1/4$ turn counterclockwise and pulling it out and then remove the bulb (Fig. 7).

Light Body Removal and Installation

Disengage the light bulb and socket

from the light body by turning $1/4$ turn counterclockwise. Remove the nuts from the light body studs (inside luggage compartment) and remove the light body from the outer side of the fender.

When installing the light body, position the body to the outer side of the fender with the studs entering the holes in the fender. Install the retainer to the studs from inside the luggage compartment, and secure both light body and retainer to the fender by installing the retaining nuts (Fig. 7).

4 REAR LIGHTS

TAIL, TURN, STOP AND BACK-UP LIGHTS—MERCURY AND METEOR EXCEPT MODEL 71

BULB REMOVAL AND INSTALLATION

The bulbs can be replaced from inside the luggage compartment. Rotate the socket counterclockwise to disengage it from the retaining tab, and then pry the bulb socket out of the light body. Turn the bulb counterclockwise to remove it from the socket.

LIGHT BODY—EXCEPT MODELS 63 AND 71

The light body is designed in three sections. To remove all three light body sections, remove the bumper arm-to-frame rail rear bolt and nut and loosen the front bolt and nut at both left and right arms of the bumper. Push the bumper down to provide clearance.

To remove either the left or the right section, remove the bumper arm rear bolt and nut and loosen the front bolt and nut at either the left or right arm of the bumper, and push down on the one side of the bumper for clearance. To remove the center light body section, both left and right sections must be removed first.

An individual section is removed by disconnecting the bulb sockets from that section and removing the nuts (inside luggage compartment) that retain the section to the rear panel.

To disassemble a light body section after removing it, remove the stereo-

foam gasket from the section and remove the screws holding the door and lens to the light body.

If the center light body section was removed, it must be installed before installing the left and right sections.

LIGHT BODY—MODEL 63

On model 63, the light body comes in two sections. Each section is retained to the rear panel by five nuts accessible from inside the luggage compartment. Both sections are covered by a door and bezel assembly which is retained to the rear panel by eleven nuts also accessible from inside the luggage compartment. This door and bezel assembly must be removed first in order to remove either light body section.

Before removing the door and bezel assembly the bumper must be dropped for clearance as described in the fore-going procedure.

TAIL, TURN AND STOPLIGHT ASSEMBLY—FORD EXCEPT MODEL 71

BULB REMOVAL AND INSTALLATION

The bulb can be replaced from inside the luggage compartment. Rotate the socket counterclockwise to disengage it from the retaining tab, and then pry the bulb socket out of the light body. Turn the bulb counterclockwise to remove it from the socket (Fig. 8).

LIGHT BODY REMOVAL AND INSTALLATION

To remove either left or right light body, disengage the bulb and socket assembly from the light body and remove the four retaining nuts from inside the luggage compartment. The light body can now be withdrawn from the inner side of the back panel (Fig. 8).

BACK-UP LIGHTS—FORD EXCEPT MODEL 71

The back-up lights are installed in the rear bumper at the left and right sides of the license plate mounting. A bulb can be replaced by removing the lens (two retaining screws) and removing the bulb from its socket (Fig. 8).

To remove the light body disengage the lead wire retainer from its locating hole, disconnect the lead wire at the bullet connector and remove the light body-to-bumper retaining screws. The light body can now be pulled out through the hole in the bumper.

TAIL, TURN AND STOPLIGHTS—FORD, MERCURY AND METEOR—MODEL 71

When servicing the left light assembly, it will be necessary to remove the interior quarter trim panel retaining screws across top and bottom edges of panel and position the panel out for access.

When servicing the right light assembly, it will be necessary to remove

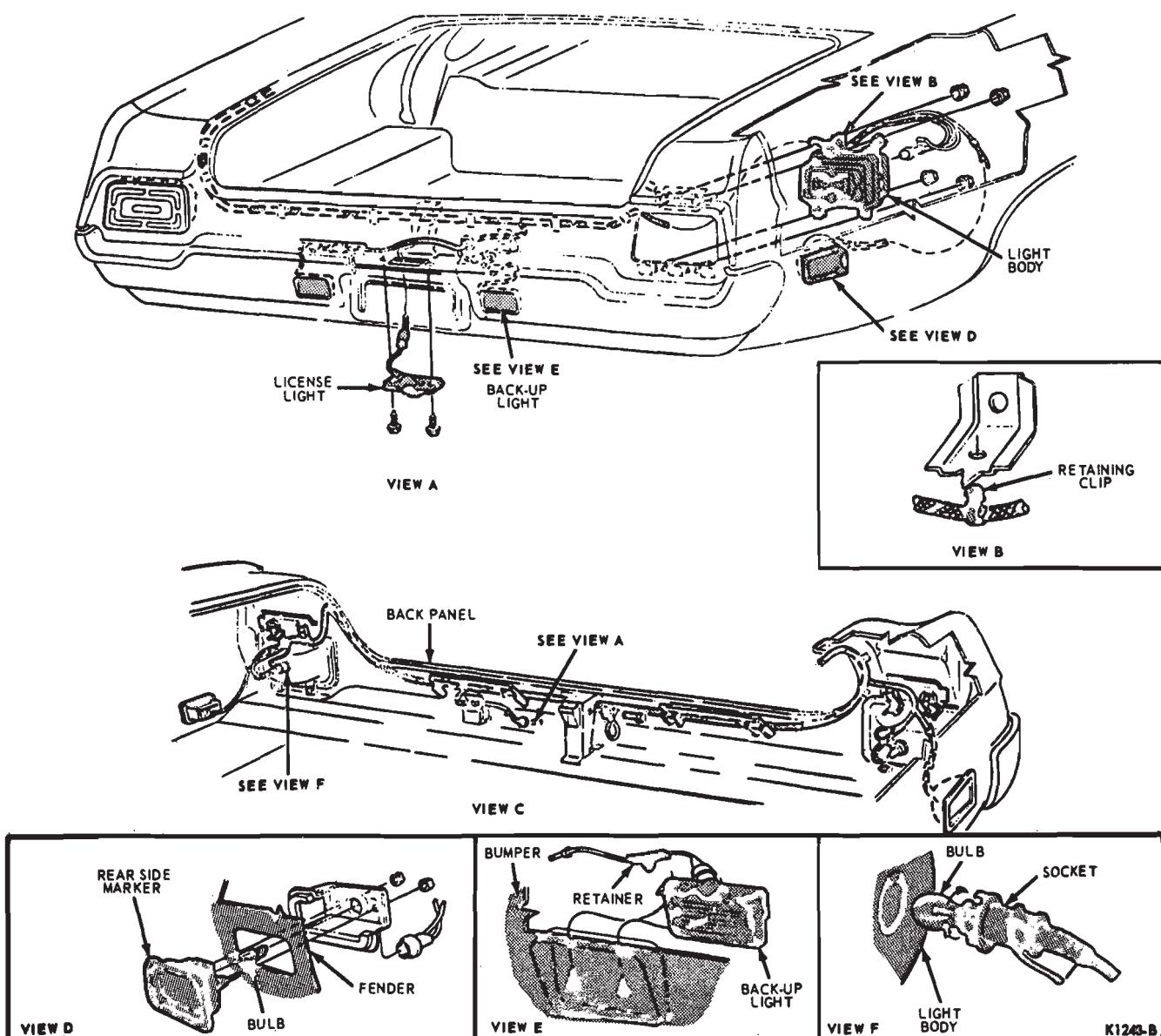


FIG. 8—Rear Light Installation—Ford Except Model 71

the cover and spare wheel for access.

A bulb can be replaced from inside the quarter panel by snapping the socket out of the light body (Fig. 9).

To remove the light body, snap out both bulb sockets, remove the retaining nuts from the light body studs and remove the light assembly from the quarter panel.

To disassemble the light body, remove the rubber seal and O-ring seals from around the outer side of the light for access to the (6) retaining screws, and separate the door and lens assembly from the light body. The lens can then be separated from the door (2 retaining screws).

When assembling the light body, cement the two O-rings and the rubber seal around the outer side of the light body.

BACK-UP LIGHTS—FORD, MERCURY AND METEOR—MODEL 71

The bulb can be replaced by removing the lens from the outer side of the body.

To remove the back-up light body it will be necessary to drop the bumper down for clearance at the side from which the light is being removed. Remove the bumper arm rear bolt and nut, loosen the front bolt and nut, and push down on the one end of the bumper.

The lead wire can now be disconnected at the plug and the two mounting nuts removed from the studs. The bracket will then come off the inner side of the bumper, and the

light body and lead wire will be removed from the outer side (Fig. 10).

TAIL TURN AND STOP LIGHTS—MUSTANG

The bulb can be removed by disengaging the socket from the light body inside the luggage compartment. Rotate the socket counterclockwise to unlock it from the retaining tab, and then pry the socket from the light body.

To remove the light body, move the spare tire to one side, remove the wiring harness from the body by releasing the harness retainers and remove the bulb socket. The light body and rubber sealer pad can now be removed from inside the quarter panel after first removing the retaining nuts.

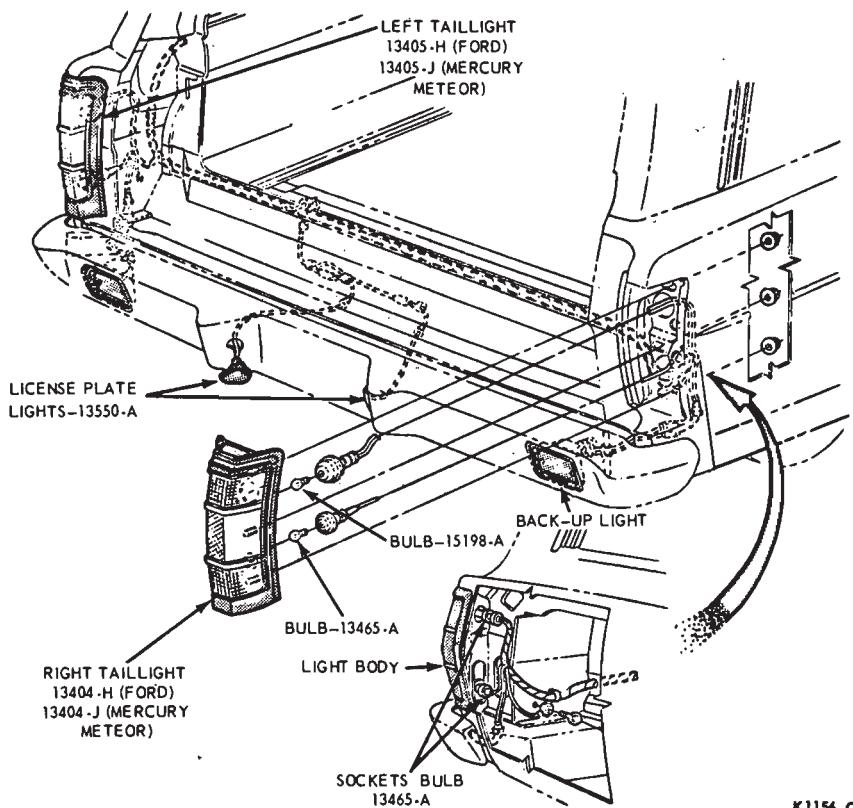


FIG. 9—Rear Light Installation—Ford, Mercury and Meteor—Model 71

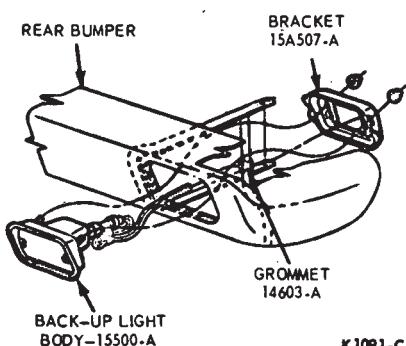


FIG. 10—Back-Up Lights—Ford, Mercury and Meteor Model 71

With the light body removed the door and/or lens can be replaced.

TAIL, TURN AND STOP LIGHTS—COUGAR

The light body comes in two sections. The interior trim must be removed from the tail panel for any service operation.

The bulbs can be replaced by disengaging the sockets from the light body from inside the luggage compartment. To remove a light body section, disengage the three bulb sockets. Remove the retaining nuts from inside the luggage compartment,

and remove the body from the outer side of the tail panel.

With the light body removed, the bezel and lens assembly can be separated from the body by removing the attaching screws.

If the light body is being replaced, the six mounting studs should be transferred to the new body.

BACK-UP LIGHTS—COUGAR

The back-up lights are mounted separately at the rear of the quarter panels. The bulb can be replaced by removing the lens from the outer side of the light body. To remove the light body it will be necessary to remove the retaining nuts from the studs at the inner side of the rear quarter and disconnect the lead wire at the plug. Remove the wire through the grommet hole and withdraw the assembly.

REAR LIGHT ASSEMBLY—FALCON EXCEPT MODEL 71

REMOVAL

1. Open the luggage compartment door, and remove the bulb socket from the light body by rotating the light socket approximately $1/4$ turn counterclockwise and pulling the

socket out. Also disconnect the back-up light and ground wires to the light body.

2. Remove the nuts retaining the light body and lens to the quarter panel extension studs at the inner side of the quarter panel and remove the light.

3. Remove the nuts retaining the door to the outer side of the quarter panel extension and remove the door.

INSTALLATION

1. Position the door to the outside of the quarter panel extension and install the retaining nuts.

2. From the inner side of the quarter panel, install the light body and lens to the quarter panel extension studs and secure with retaining nuts.

3. Connect the back-up light and ground wires to the light body, and insert in the bulb socket and rotate the socket clockwise until it stops.

4. Check the operation of the tail-light, and close the luggage compartment door.

REAR LIGHT ASSEMBLY—MAVERICK

There is a light body on both the left and right sides of the back panel (Fig. 11). Each light body has two bulbs. The inner bulb is the back-up light (white lens). The outer bulb is the tail, stop and turn signal light (red lens).

BULB REMOVAL AND INSTALLATION

From inside the luggage compartment, pull the socket out of the light body, turn the bulb counterclockwise and remove it from the socket (Fig. 11).

LIGHT BODY REMOVAL AND INSTALLATION

From inside the luggage compartment, pull the two light bulb sockets from the body and remove the four light body-to-back panel attaching nuts from the studs (Fig. 11). Remove the light body and door assembly from the outer side of the back panel.

Remove the six phillips head screws and retainers from the inner side of the light body and separate the door from the body and lens. If only the door is being replaced, position the body and lens to the new door. If the light body is being replaced, transfer the lens to the new body and install a

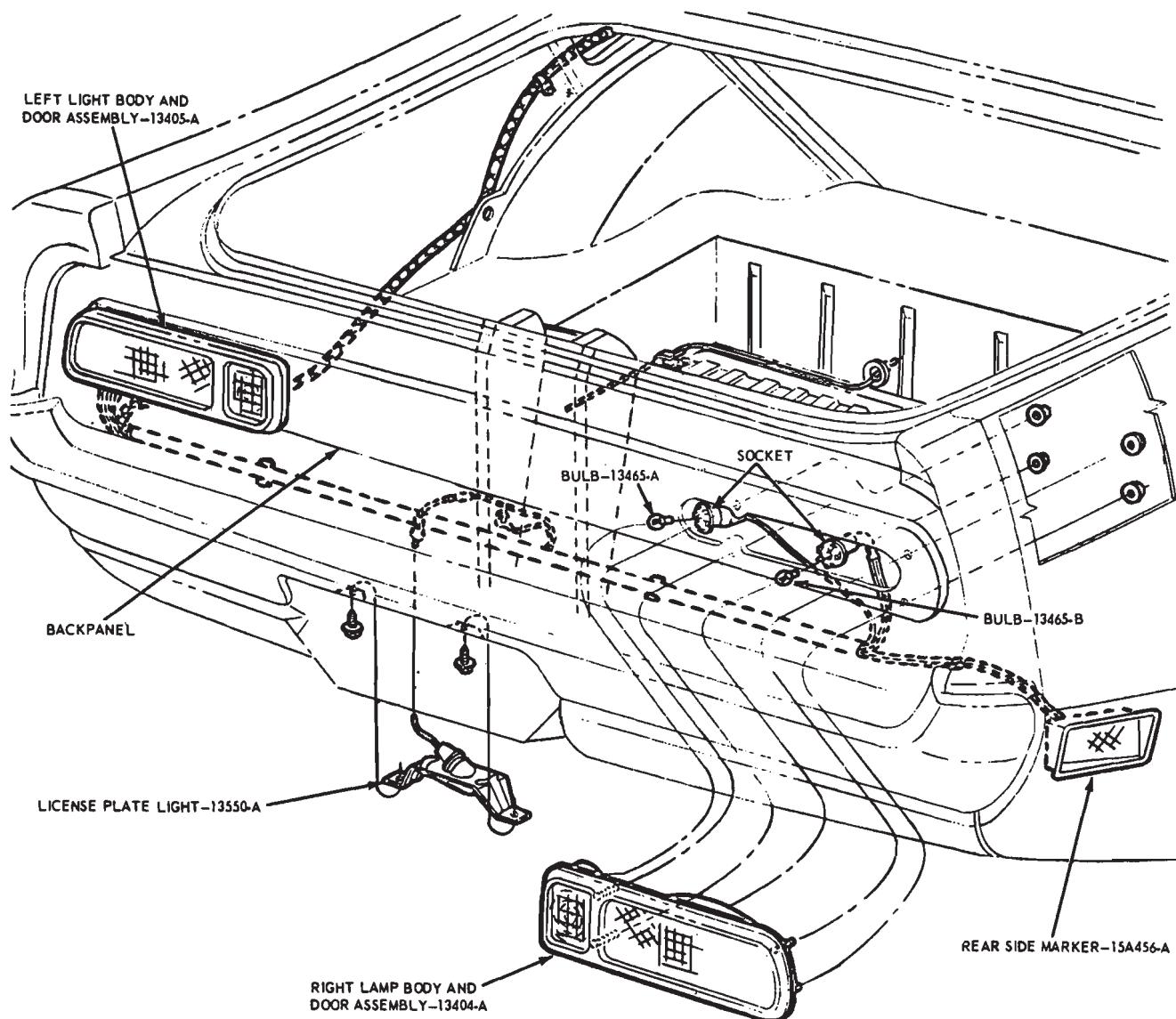


FIG. 11—Maverick Rear Light Installation

new lens gasket.

Assemble the body and lens to the door by installing six screws and retainers. Before installing the light body and door assembly to the back panel, position the body gasket (no glue) over the four mounting studs.

REAR LIGHT ASSEMBLY—FAIRLANE EXCEPT MODEL 71 AND MONTEGO EXCEPT MODELS 66 AND 71

BULB REMOVAL AND INSTALLATION

The bulbs can be replaced from inside the luggage compartment. Rotate the socket counterclockwise to disengage it from the retaining tab, and then pry the bulb socket out of

the light body. Turn the bulb counterclockwise to remove it from the socket (Fig. 12).

LIGHT BODY OR LIGHT DOOR REMOVAL AND INSTALLATION

On models shown in the left side of Fig. 12, the right and left light door assemblies each have four studs which enter holes in the back panel from the outer side. The right and left light bodies are installed on these studs from the inner side so that both door and body are retained to the back panel by the same retaining nuts.

On models shown in the right side of Fig. 12, one large door is mounted across the back panel covering both rear light bodies. In addition to the

studs and nuts at each light body, the center of the door is held to the back panel by four more studs and nuts.

To remove either a right or left light body (any model), it is necessary to raise the luggage compartment door and work at the inner side of the back panel. Disengage the bulb and socket assemblies from the light body, remove the body-to-back panel retaining nuts, and pull the light body off the mounting studs from the inner side of the back panel (Fig. 12).

On models shown in the left side of Fig. 12, a door can be removed by first removing the corresponding light body and pulling the door off the back panel from the outside.

To replace the one large door on models shown in the right side of Fig. 12, remove both light bodies and the

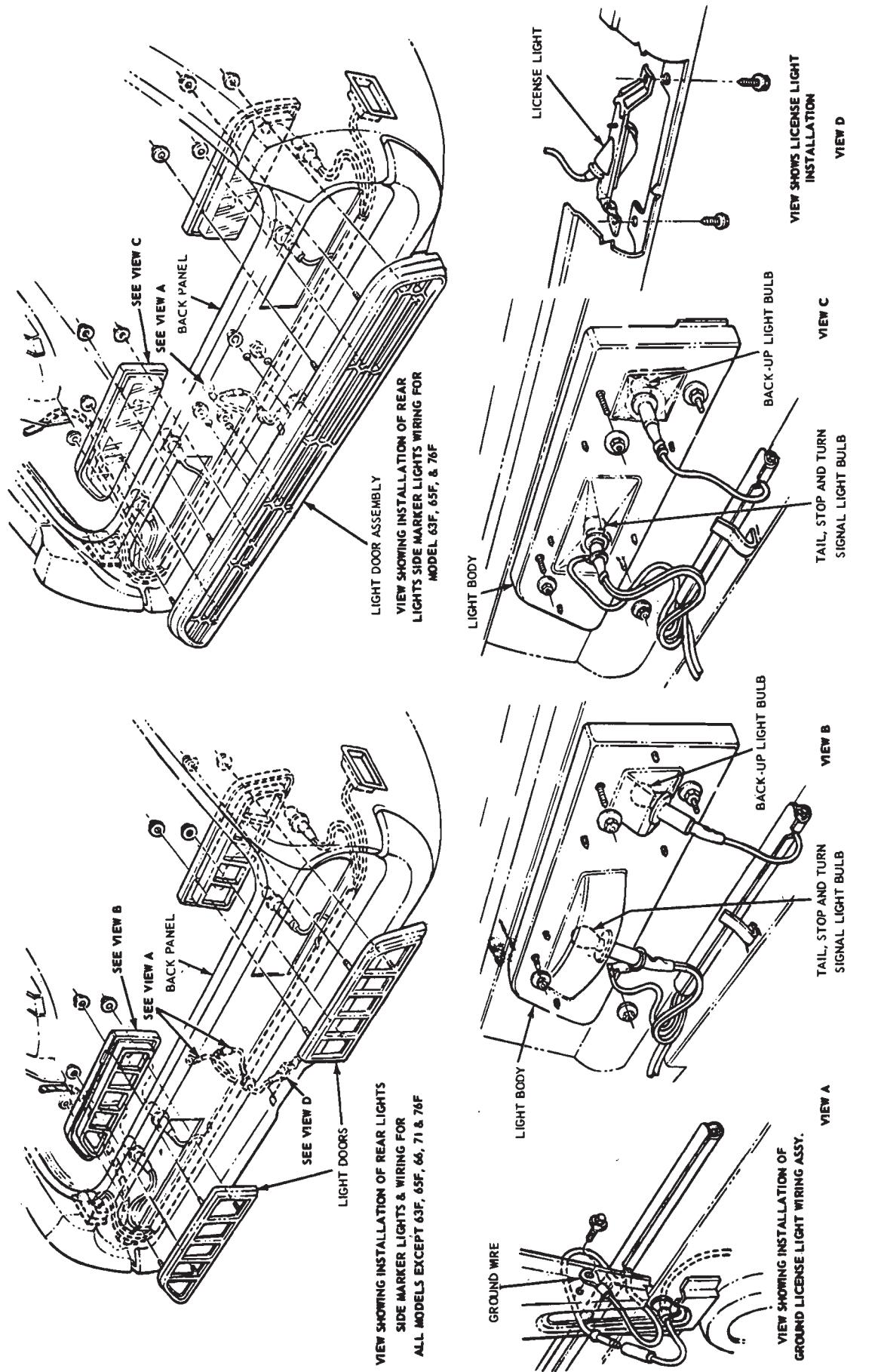
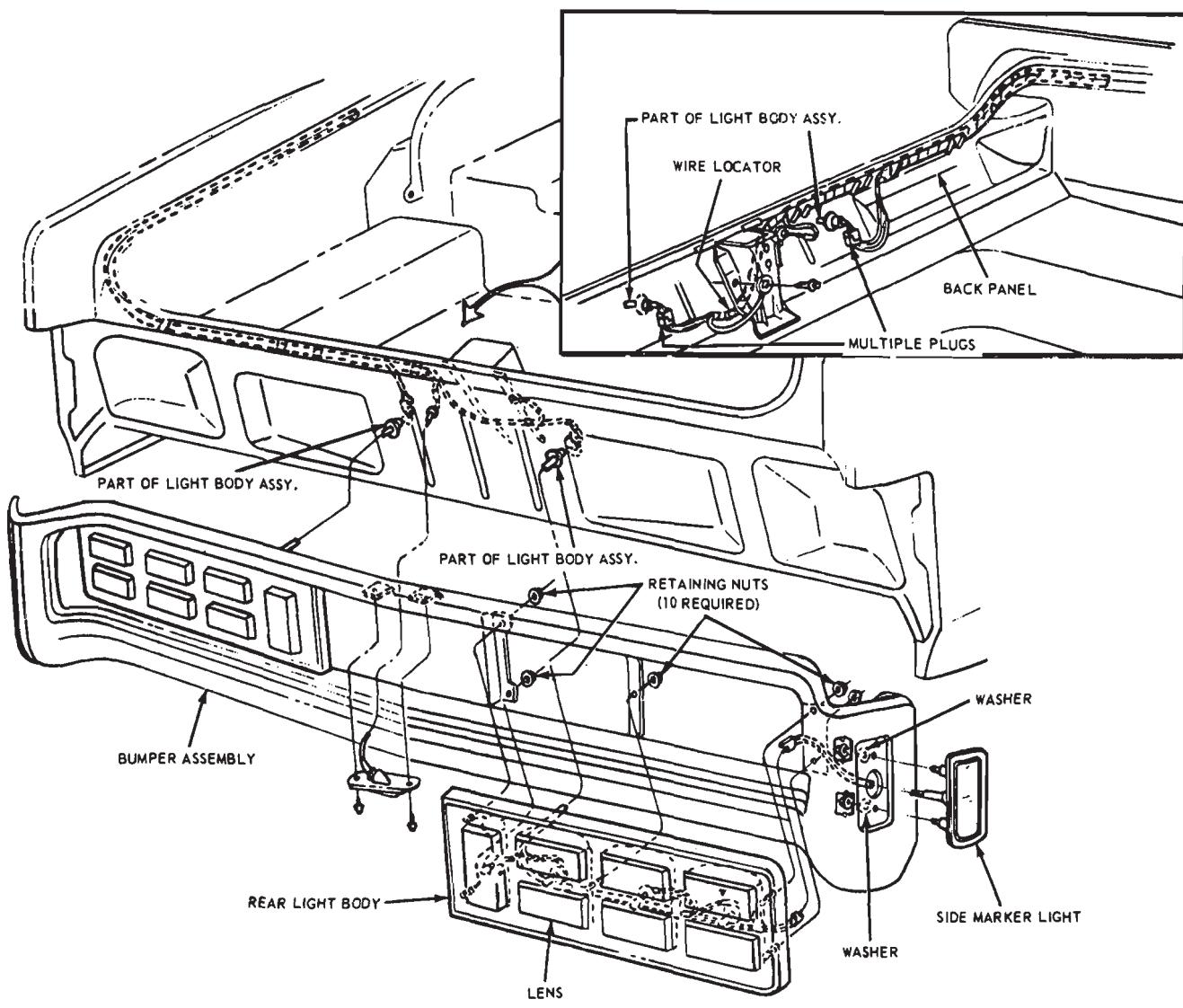


FIG. 12—Rear Light Installation—Fairlane, Typical of Montego



K1628-C

FIG. 13—Lincoln Continental Rear Light Installation

four additional nuts at the center, and then pull the door from the back panel.

REAR LIGHT ASSEMBLY— FALCON, FAIRLANE AND MONTEGO MODEL 71

The lens and the light body are mounted to the rear quarter by the same retaining screws. To replace the bulb, remove the screws, separate the lens from the light body and remove the bulb from the socket. The light body can be removed at this point after disconnecting the multiple connector plug.

When installing the light, be sure that the spring nuts are in place on

the rear quarter panel.

TAIL, TURN AND STOP LIGHTS—LINCOLN CONTINENTAL

The light assembly comes in two sections mounted in the rear bumper (Fig. 13).

The bulbs can be replaced by removing the retaining screws and lens from the outside of the light body.

To remove either one or both light body sections it will be necessary to disconnect the multiple connector plug to each section and remove the rear bumper from the vehicle. See Group 48 for bumper removal. Remove the retaining nuts from the inner side of the bumper and with-

draw the light body section(s) from the outer side of the bumper.

TAILLIGHT AND/OR REAR MARKER LIGHT—CONTINENTAL MARK III

BULB REMOVAL AND INSTALLATION

To replace a taillight bulb or rear marker light bulb in either rear light body, open the rear deck lid and pull aside the luggage compartment side trim panel for access to the bulb sockets. Turn the socket about 1/4-turn counterclockwise and remove the bulb and socket assembly from the light body. Replace the defective bulb.

then press the bulb and socket assembly into the light body and turn it clockwise until it stops. Cement the side trim panel in place.

LIGHT BODY REMOVAL AND INSTALLATION

Removal

- From inside the luggage compartment, pull aside the side trim panel and remove the taillight and rear marker light bulb and socket assemblies from the rear light body. Remove the two retaining nuts from the light body studs.

- Carefully pull the rear light body straight to the rear, just far enough to gain access to the flexible plastic rod for the taillight monitor. Remove the plastic rod from the rear light body, and remove the light body from the car. **Handle the taillight monitor plastic rod with care as any damage to the surface of the rod will adversely affect its light transmission qualities.**

- Remove the four screws retaining the lens door to the light body, and separate the door, lens, gasket and body. Remove the two O-rings from the light body.

Installation

- Install the O-rings to the light body. Position the lens gasket, lens and door to the light body and install the four retaining screws. Cement a new light body gasket to the light body assembly.

- Holding the light body assembly slightly to the rear of its installed position, insert the taillight monitor plastic rod in the light body.

- Carefully guide the light body assembly forward to its installed position and install the two retaining nuts to the light body studs. Install the taillight and rear marker light bulb

and socket assemblies to the light body, and cement the luggage compartment side trim panel in place.

TAILLIGHT—THUNDERBIRD

BULB REMOVAL AND INSTALLATION

The taillight bulbs are installed in plug-in sockets. To replace a bulb, open the luggage compartment door and position the luggage compartment rear liner out of the way. Unplug the bulb and socket assembly from the light housing. Replace the bulb and plug the bulb and socket into the light housing, then install the luggage compartment rear liner.

REAR LIGHT BODY REMOVAL AND INSTALLATION

To remove the rear light body, move the luggage compartment rear liner out of the way, unplug the ten light bulb sockets, disconnect the back-up light leads and monitor tubes, and remove the eight nuts that retain the light body to the tail panel. Using an Allen wrench, remove the eight studs with the nuts. The light body can now be removed from the tail panel as a complete assembly.

Any one of the four doors, lenses or gaskets, finish panel, or rubber seals can be replaced by removing the lock cylinder and the necessary attaching screws.

If the light body is being replaced, transfer the parts with new gaskets to the new body. Cement the rubber seal to the light body and cement the rubber O-rings to the rear side of the body at the bulb openings.

Position the assembled light body to the tail panel, install the nine studs (with nuts on the studs) and tighten the nuts.

SUPPLEMENTAL STOP LIGHT—THUNDERBIRD

When the brake pedal is pushed down the stop light switch energizes the relay which sends power to the supplemental stop lights (Fig. 14). Bulb and light body removal and installation procedures follow.

MODEL 65

Remove the cover assembly (three retaining screws) and disconnect the lead wire plug (View C, Fig. 1).

To replace a bulb, remove the screw at the upper end of the hinged bulb holder and cover assembly, and swing the assembly down for access to the bulbs. Remove the bulb(s) from the fuse-type retainers. To replace the light body, remove the two light body-to-bracket screws and remove the light body. When installing the light body, be sure that the spring nuts are properly positioned on the bracket.

MODEL 54

To replace a bulb, remove the bulb holder and moulding assembly from the light body (two retaining screws) and remove the bulb(s) from the fuse-type retainers on the inner side of the holder and moulding assembly (View D, Fig. 14).

To replace the light body, remove the four retaining screws, disconnect the lead wire plug at the front end of the luggage compartment, and from the passenger compartment withdraw the light and wire assembly. The wire and plug come out through the grommet.

When installing, thread the wire and plug through the grommet, position the light and install the retaining screws. After installing the light body, connect the plug in the luggage compartment.

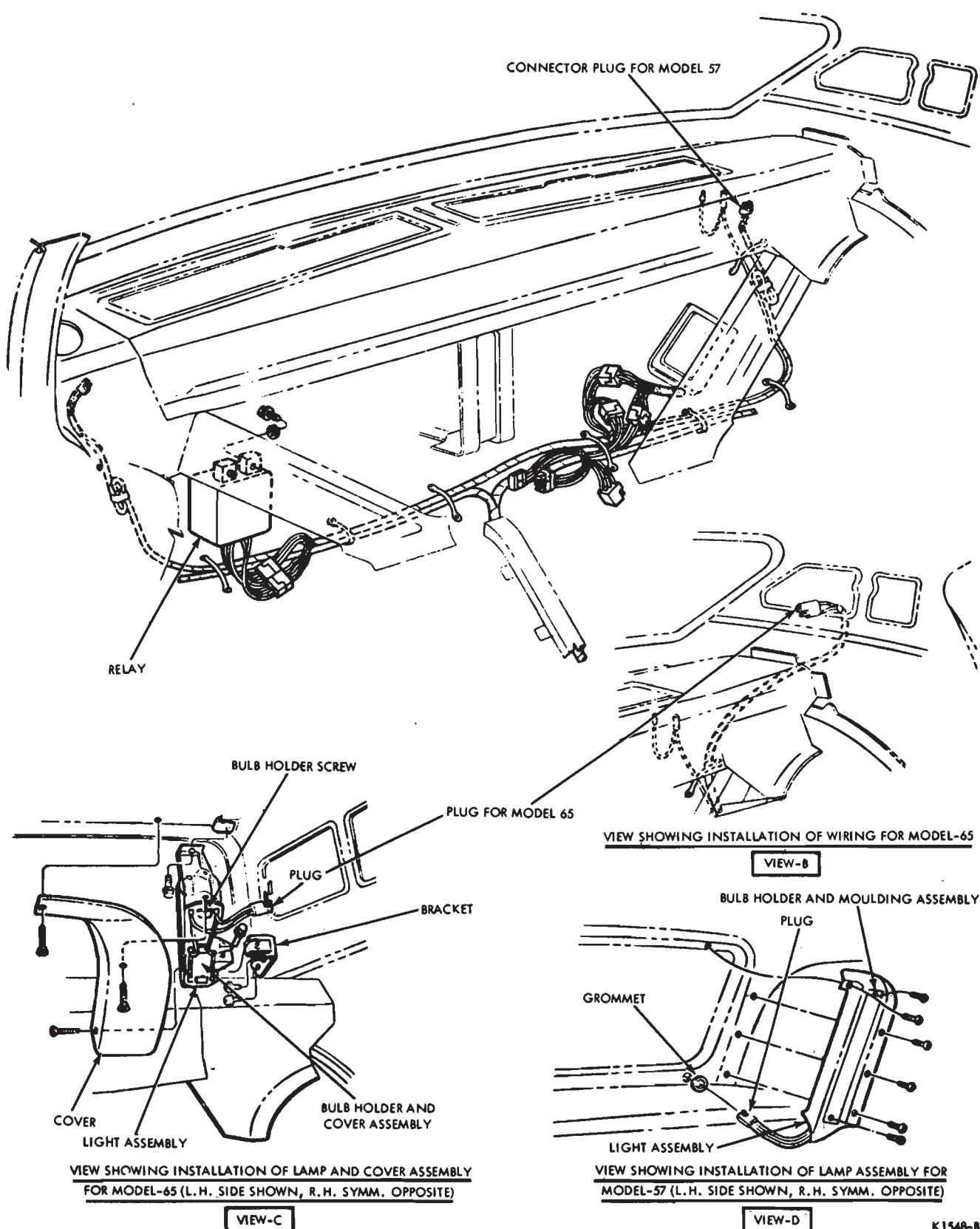


FIG. 14—Supplemental Stop Light Installation—Thunderbird

PART 32-04 Turn Signal and Emergency Flasher Systems and Horns

COMPONENT INDEX Applies To Models As Indicated	All Models	Ford	Mercury	Meteor	Cougar	Fairlane	Falcon	Maverick	Montego	Mustang	Lincoln- Continental	Thunderbird	Continental- Mark III
EMERGENCY FLASHER													
Description and Operation	04-03	04-03	04-03	04-02	04-02	04-02	04-02	04-02	04-02	04-02	04-03	04-02	04-02
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FLASHER UNIT													
Removal and Installation	04-03	04-03	04-03	04-02	04-03	04-03	04-03	04-03	04-03	04-03	04-03	04-02	04-03
HORNS													
Description and Operation	04-05	04-05	04-05	04-05	04-05	04-05	04-05	04-05	04-05	04-05	04-06	04-05	04-07
Removal and Installation	04-05	04-05	04-05	04-05	04-05	04-05	04-05	04-05	04-05	04-05	04-06	04-06	04-07
HORN ADJUSTMENT	04-07												
HORN RELAY REMOVAL AND INSTALLATION		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	04-06	N/A
HORN SWITCH REMOVAL AND INSTALLATION	04-07												
HORN TEST	04-07												
RIM BLOW HORN SWITCH													
Description and Operation	04-07												
Removal and Installation	04-07												
SEQUENTIAL TURN SIGNAL													
Description and Operation	N/A	N/A	N/A	04-01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	04-01	N/A
TRANSISTOR SEQUENCER SWITCH													
Removal and Installation	N/A	N/A	N/A	04-02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	04-02	N/A
TURN SIGNAL SWITCH REMOVAL AND INSTALLATION	04-05	04-05	04-05	04-05	04-05	04-04	04-05	04-05	04-05	04-05	04-05	04-05	04-05

A page number indicates that the item is for the vehicle(s) listed at the head of the column.
N/A indicates that the item is not applicable to the vehicle(s) listed.

1 SOLID STATE SEQUENTIAL TURN SIGNAL AND EMERGENCY FLASHER SYSTEM—COUGAR AND THUNDERBIRD

SEQUENTIAL TURN SIGNAL SYSTEM—DESCRIPTION AND OPERATION

SYSTEM COMPONENTS

1. 20-ampere fuse in fuse panel.
2. Turn Signal Flasher.
3. Turn Signal and Emergency Indicator Switch Assembly.
4. Transistorized Sequencer Assembly in the luggage compartment.
5. Two indicator bulbs—in instrument cluster.
6. Eight outside lights—two front, six rear.

OPERATION

The electrical feed source originates through the ignition switch, is routed through a set of contacts in each of the following units:

1. Turn signal flasher—contacts normally closed.
2. Emergency indicator switch—contacts closed with switch in OFF position.
3. Turn signal switch—contacts closed in a turn position.

Turning the ignition switch on, energizes the system up to the turn signal switch as described above. When the turn signal switch lever is moved into a turn position, electrical feed is

directed to two separate circuits:

Circuit No. 1—is directed to the transistorized sequencer and also energizes the front turn signal bulb and the indicator bulb (on the instrument cluster) for the turn selected.

Circuit No. 2—is directed to the transistorized sequencer and also energizes the inboard bulb of the three rear lights on the side selected.

With these components energized simultaneously, the sequencer begins to control the electrical feed to the rear lights and thus creates the sequential effect.

The four outside lights of the side selected illuminate in the following order:

The front light and inboard rear

light always illuminate first and remain on; the center light of the three rear lights then illuminates and also stays on; then, the outboard rear light illuminates. At this point (when the current load routed through the Turn Signal Flasher reaches the four light stage) the contacts in the Turn Signal Flasher open, extinguishing the four outside lights and the turn indicator bulb. The Turn Signal Flasher contacts then close again the cycle repeats itself until the Turn Signal Switch is returned to the neutral position.

The opening and closing of the Turn Signal Flasher contacts causes the flashing effect of the front light and the indicator bulb.

In addition, the control relays for the cornering and supplemental stop lights (if so equipped) are activated by the turn signal system.

Brake Application On Turns

Brake application during a turn will illuminate only the three lights.

During the turn, the sequencer switch electrically separates the affected stoplight circuit from the sequential turn signal cycle.

Light Operations With One Exterior Bulb Burned Out

When one of the eight exterior light bulbs burns out, the three remaining good bulbs on the affected side of the vehicle will sequence until all three are lighted. They will then remain lighted until the turn signal switch is returned to the neutral position. Also remaining lighted until the opening of the turn signal switch are:

1. The affected indicator bulb in the instrument cluster.
2. The cornering light, on the side affected (if so equipped).
3. The supplemental stop light on the side affected (if so equipped). A burned out cornering light or supplemental stop light, however, will not affect sequential turn signal system operation.

EMERGENCY FLASHER SYSTEM DESCRIPTION AND OPERATION

SYSTEM COMPONENTS

1. 15-ampere Circuit Breaker.
2. Emergency Warning Flasher.
3. Turn Signal and Emergency Indicator Switch Assembly.
4. Transistorized Sequencer As-

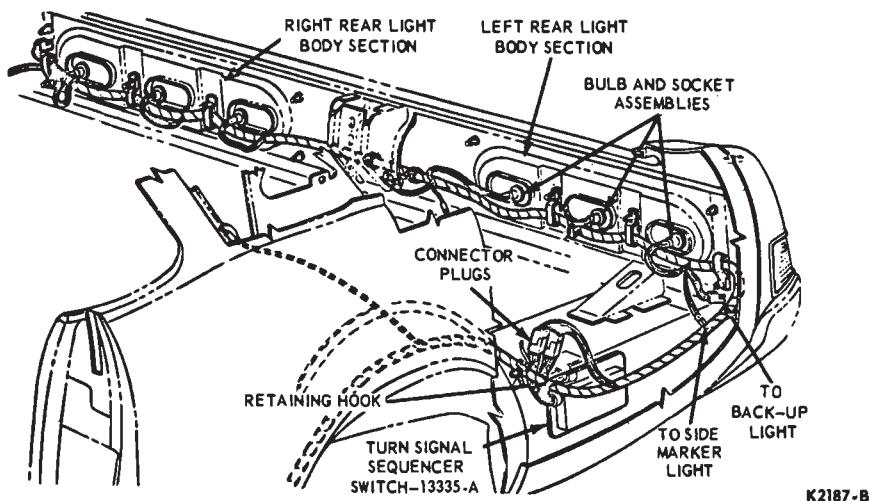


FIG. 1—Cougar Rear Lights, Sequencer Switch and Wiring

sembly in the luggage compartment.

5. Two indicator bulbs—in the instrument cluster.

6. Eight outside lights—two front, six rear.

OPERATION

Electrical feed is directed through a 15-ampere circuit breaker directly from the battery. This hot feed is routed through a heater coil in the emergency indicator flasher and then through two sets of contacts, in the emergency indicator switch, which are closed when the indicator switch is in the ON position. The feed is then distributed to all affected circuits through the turn signal switch and wiring assembly.

Pushing the emergency indicator switch to the ON position connects the electrical feed to the system circuits. These circuits are routed in such a way that the feed to the two indicator bulbs and the eight outside lights first passes through the heater coil of the emergency indicator flasher. The heater coil, however, restricts current flow so that the amount reaching the lights is not enough to illuminate them.

As the coil heats up (from restricting current) it closes the contacts within the flasher allowing the current to bypass the coil and go directly to the feed circuits illuminating the ten lights. The heater coil then cools causing the contacts to open again and extinguish the ten lights. The cycle now begins again. The result is flashing lights for emergency indicator operation. The cycle continues until the emergency indicator flasher switch is pulled out to the OFF position.

TRANSISTORIZED SEQUENCER SWITCH REPLACEMENT

COUGAR

Open the luggage compartment door and remove the left quarter trim panel for access. To remove the sequencer switch, disconnect the two connector plugs and lift the assembly from its retaining hooks (Fig. 1).

THUNDERBIRD

Remove the spare wheel from the luggage compartment for access to the switch. Remove the screw that retains the switch to the rear seat cushion body brace, disconnect the two multiple connectors and remove the switch from the vehicle.

FLASHER UNIT REMOVAL AND INSTALLATION

The Cougar emergency indicator flasher unit is clamped in a bracket mounted in the instrument panel at the lower right edge of the radio opening. The Cougar turn signal flasher is similarly clamped in a bracket in the instrument panel at the lower left edge of the radio opening.

The Thunderbird emergency indicator flasher unit is clamped in a bracket mounted to the back of the instrument panel to the left of the glove compartment. The Thunderbird turn signal flasher is clamped in a bracket at the back of the instrument panel to the right of the glove box.

To replace either flasher, reach under the instrument panel, disconnect the connector plug and snap the flasher out of the bracket.

2 TURN SIGNAL AND EMERGENCY FLASHER SYSTEM—ALL EXCEPT COUGAR AND THUNDERBIRD

DESCRIPTION AND OPERATION

The turn signal and emergency flasher switches are integral parts of the same switch assembly mounted on the steering column hub.

The turn signal switch lever is on the left side of the upper steering column hub. The emergency flasher switch knob is located on the right side of the upper steering column hub.

To operate the turn signals, the ignition switch must be in either the ACC or ON positions. To indicate a normal full turn, move the turn signal switch lever to the second stop position for the turn desired. The lever will remain in position without manual effort until the turn is completed, at which time the lever will automatically cancel the turn signals.

The emergency flasher system is operated independently of the ignition switch. All turn signal lights can be made to flash at the same time by

pushing in the actuating knob of the emergency flasher switch located on the side of the steering column.

Two flasher units are used. One unit is used in the turn signal circuit and the other for the emergency flasher system. Refer to the Wiring and Vacuum Diagrams Manual, Form 7795P-70.

The turn signal system also has a lane change feature. To operate the lane change system, move and hold the turn signal lever to the first stop position when changing lanes. When the lane maneuver is completed, release the lever and it will return to the off position.

TURN SIGNAL FLASHER AND/OR EMERGENCY FLASHER UNIT REPLACEMENT

LINCOLN CONTINENTAL

The flashers do not have mounting brackets or separate wiring plugs because they plug directly into the fuse

and circuit breaker panel. The emergency flasher plugs into the upper left corner of the panel, and the turn signal flasher plugs into the lower left corner. The fuse and circuit breaker panel is mounted on the left side of the dash panel near the parking brake.

CLAMP BRACKET MOUNTED FLASHERS

With this type of mounting, the flasher is clamped in a bracket which is mounted to the back of the instrument panel. To replace this type of flasher, disconnect the wiring plug from the flasher, and snap the flasher out of its bracket. Fig. 2 gives the location and applicable vehicle line.

TAB AND SLOT MOUNTED FLASHERS

A mounting tab on the bottom of the flasher unit locks into a slot in the lower edge of the instrument panel.

Vehicle Line	Type Of Mounting	Location	
		Turn Signal Flasher	Emergency Flasher
Falcon	Tab and Slot	Lower edge of instrument panel to right of steering column	
	Clamp Bracket		Lower edge of instrument column to left of steering column
Maverick	Tab and Slot	Instrument panel lower flange to the left of the instrument cluster	
	Clamp Bracket		Instrument panel lower flange behind ash tray. Remove tray for access
Ford, Meteor, and Mercury	Clamp Bracket	Flange behind the left side of glove box	
	Tab and Slot		Left lower edge of instrument panel
Mustang	Clamp Bracket	Back of instrument panel to right of ash tray	Back of instrument panel above and to left of ash tray
Fairlane and Montego	Clamp Bracket	Back of instrument panel to right of steering column	Back of instrument panel to left of steering column
Continental Mark III	Clamp Bracket	Back of instrument panel to right of glove box	Back of instrument panel to left of glove box

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FIG. 2—Turn Signal and Emergency Flasher Mounting Locations

To remove this type of flasher, reach under the instrument panel, disconnect the wiring plug, and rotate the unit 90 degrees counterclockwise to

disengage it from the mounting slot. To install, lock the flasher in place by inserting the tab in the slot and rotat-

ing 90 degrees clockwise. Fig. 2 gives the location and applicable vehicle line.

4 TURN SIGNAL/EMERGENCY FLASHER SWITCH AND WIRE ASSEMBLY-ALL VEHICLE LINES

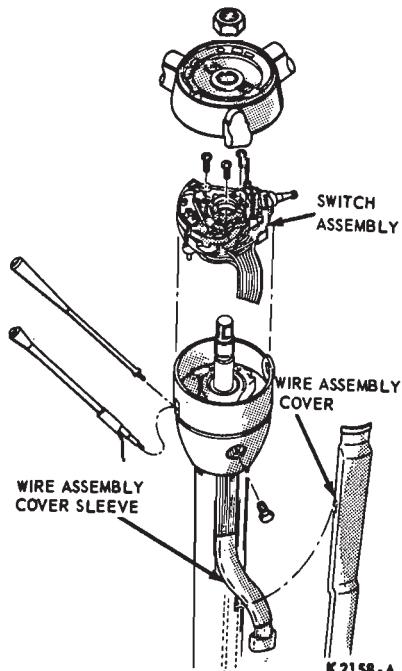


FIG. 3—Turn Signal/Emergency Flasher Switch Removal—Falcon

The turn signal switch and the emergency flasher switch are parts of the same switch assembly in the steering column.

FALCON

REMOVAL

1. Disconnect the battery ground cable (negative cable).
2. Remove the medallion from the steering wheel spoke pad by gently prying it out with a knife blade. Remove the two screws securing the pad and lift the pad from the steering wheel.
3. Disconnect the two horn wires at the horn switch assembly. Remove the nut securing the steering wheel to the column. Using tool 3600-AA, remove the steering wheel.
4. Pry the wire cover (Fig. 3) from the steering column. Disconnect the

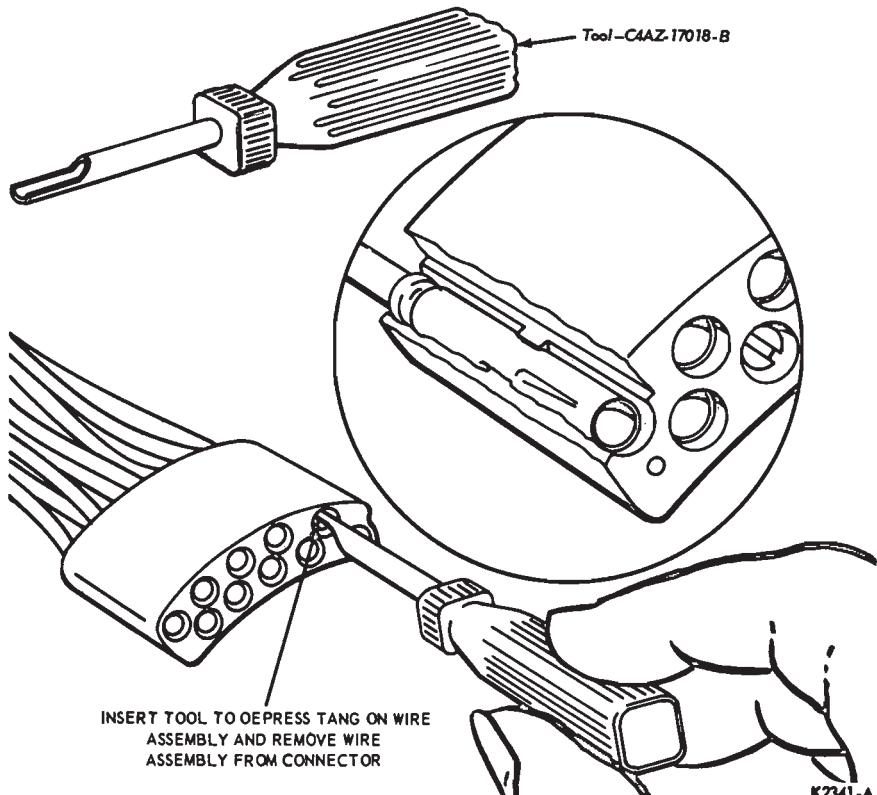


FIG. 4—Wire Terminal Removal

multiple connector at the base of the steering column.

5. Remove the wires and terminals from the steering column wiring connector plug(s) with tool C4AZ-17018-B, as shown in Fig. 4. Record the color code and location of each wire before removing it from the connector plug. Remove the wire cover plastic sleeve.

6. Unscrew the turn signal switch lever.

7. Remove the two screws retaining the turn signal/emergency flasher switch to the steering column and remove the switch and wire assembly.

INSTALLATION

1. Position the switch assembly to

the steering column hub and install the two retaining screws.

2. Install the wire cover plastic sleeve. Press the switch wire terminals into the connector plug(s) in their correct locations recorded during removal. Connect the steering column wiring connectors.

3. Install the wiring cover to the column.

4. Install the turn signal switch lever.

5. Position the steering wheel on the steering shaft and install the steering wheel retaining nut. Torque the nut to specifications.

6. Connect the horn switch wires. Position the pad to the steering wheel spokes and install the two retaining screws. Snap the medallion in posi-

tion.

7. Connect the battery ground cable to the battery.

8. Check the operation of the turn signals, emergency flashers and horns.

ALL EXCEPT FALCON

1. Remove the retaining screw from the underside of each steering wheel spoke, and lift off the pad horn switch/trim cover and medallion as an assembly. Disconnect the horn switch wires from the terminals.

2. Remove the steering wheel retaining nut and, using tool 3600AA, remove the steering wheel from the shaft.

3. Remove the turn signal switch lever by unscrewing it from the steering column.

4. Remove the cover from the steering column. On Mustang, Cougar and Fairlane, the cover is removed by pressing up on the left side and down on the right side to spread it open. On other car lines a two piece cover is retained to the column by screws.

On Mustang and Cougar, remove

the shroud from under the steering column (two screws).

5. Disconnect the steering column wiring connector plug(s), and remove the screws that secure the switch assembly to the column.

On a vehicle equipped with a tilt column, remove the wiring harness retaining clip from the side of the column (one screw).

6. On all except Ford, Meteor, Mercury and Fairlane vehicles with a fixed column, remove the wires and terminals from the steering column wiring connector plug(s) with tool C4AZ-17018-B as shown in Fig. 4. Record the color code and location of each wire before removing it from the connector plug.

A hole provided in the flange casting (at the top of the column) on Ford, Meteor, Mercury and Fairlane vehicles makes it unnecessary to separate the wires from the connector plug. The plug with wires installed can be guided through the hole. With a tilt column, however, the bracketry and narrow clearances at the lower end of the column require separation of the wires from the plug.

7. Remove the plastic cover sleeve from the wiring harness and remove the switch and wires from the top of the column.

8. When installing the switch, route the wires through the top of the column so that they come out below the flange casting and secure the switch to the column with the retaining screws.

9. If the wires were separated from the connector plug(s), press the wire terminals into their correct location in the plug(s).

Connect the plug(s) to their mating plugs at the lower end of the column, and install the plastic cover sleeve over the wiring harness.

10. Install all retaining clips, shrouds and covers that were removed and install the turn signal switch lever.

11. Install the steering wheel, and retaining nut and torque to specifications.

12. Connect the horn switch wires and install the pad, horn switch/trim cover and medallion as an assembly to the steering wheel. Install the retaining screws.

3 HORNS

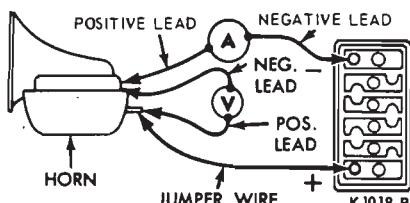


FIG. 5—Horn Current Draw Test

ALL EXCEPT LINCOLN CONTINENTAL AND CONTINENTAL MARK III

DESCRIPTION AND OPERATION

- All Falcons, most Mavericks, and Models 54, 62, 65 and 71 of the Fairlane and Montego car lines have a single low pitch horn. All other vehicles in this group are equipped with a pair of tuned horns. The horn switch closes the circuit to the horns without the use of a relay. One of the horns has a high-pitched tone; the other has a low-pitched tone.

Ford, Meteor and Mercury vehicles

equipped with a speed control have a relay in the circuit.

HORN REMOVAL AND INSTALLATION

Falcon and Maverick

The horn and bracket assembly is mounted on the left fender apron behind the radiator left support. Disconnect the horn wire from the terminal and remove the bracket to fender apron mounting bolt.

When installing, tighten the mounting bolt to 12-18 ft-lbs torque.

Mustang and Cougar

The horn and bracket assemblies are mounted to the front side of the radiator right support at the upper end of the support. The outboard unit is the high pitch horn; the inboard unit is the low pitch horn.

Disconnect the horn wire from the terminal and remove the bolt and nut that fastens the bracket reinforcement

and horn assembly to the radiator support.

When installing a horn and bracket assembly, insert the mounting bolt from the rear side of the radiator support through the reinforcement, the radiator support and the horn bracket. Install the lock nuts and tighten the bolts to 12-18 ft-lbs torque.

Ford, Meteor, and Mercury

The horn and bracket assemblies are mounted on the left fender apron forward extension. The high pitch horn is to the left of the windshield washer reservoir; the low pitch horn is to the rear of the reservoir.

Disconnect the horn wire from the terminal and remove the mounting bolt. When installing a horn and bracket assembly, tighten the mounting bolt to 12-18 ft-lbs torque.

Fairlane and Montego

The horn and bracket assembly is mounted on the left fender apron in

front of the windshield washer reservoir.

Disconnect the horn wire from the terminal and remove the mounting bolt.

Thunderbird

The horn and bracket assemblies are mounted side by side on the left fender apron forward extension. The inboard unit is the low pitch horn; the outboard unit is the high pitch horn.

To remove either unit, disconnect the horn wire from the terminal and remove the mounting bolt.

HORN RELAY REMOVAL AND INSTALLATION

The horn relay is mounted to the speed control amplifier under the in-

strument panel. Remove the screws retaining the amplifier and bracket assembly to the dash lower assembly and remove. Pull the connector plug from the relay, remove the bolt and nut retaining the relay to the amplifier bracket and remove the relay. Plug in the new relay, mount the relay to the amplifier bracket, and mount the entire assembly to the dash.

LINCOLN CONTINENTAL

DESCRIPTION AND OPERATION

The Lincoln Continental is equipped with three tuned horns that are mounted along the upper side of the radiator support between the radiator and the grille. The horn switch at the steering wheel closes the circuit to

the horns without the use of a relay.

REMOVAL AND INSTALLATION

The radiator grille opening panel extends across the radiator and grille between the two fenders. This panel has to be removed for access to any one of the three horns. Remove the panel-to-fender bolts (two at each fender) and remove the panel from over the radiator and grille.

To remove any of the horn and bracket assemblies, disconnect the horn wire from the terminal and remove the horn bracket-to-radiator upper support bolt. The unit at the right end of the radiator support and the inboard unit at the left end are low pitch horns. The unit at the outboard left is the high pitch horn.

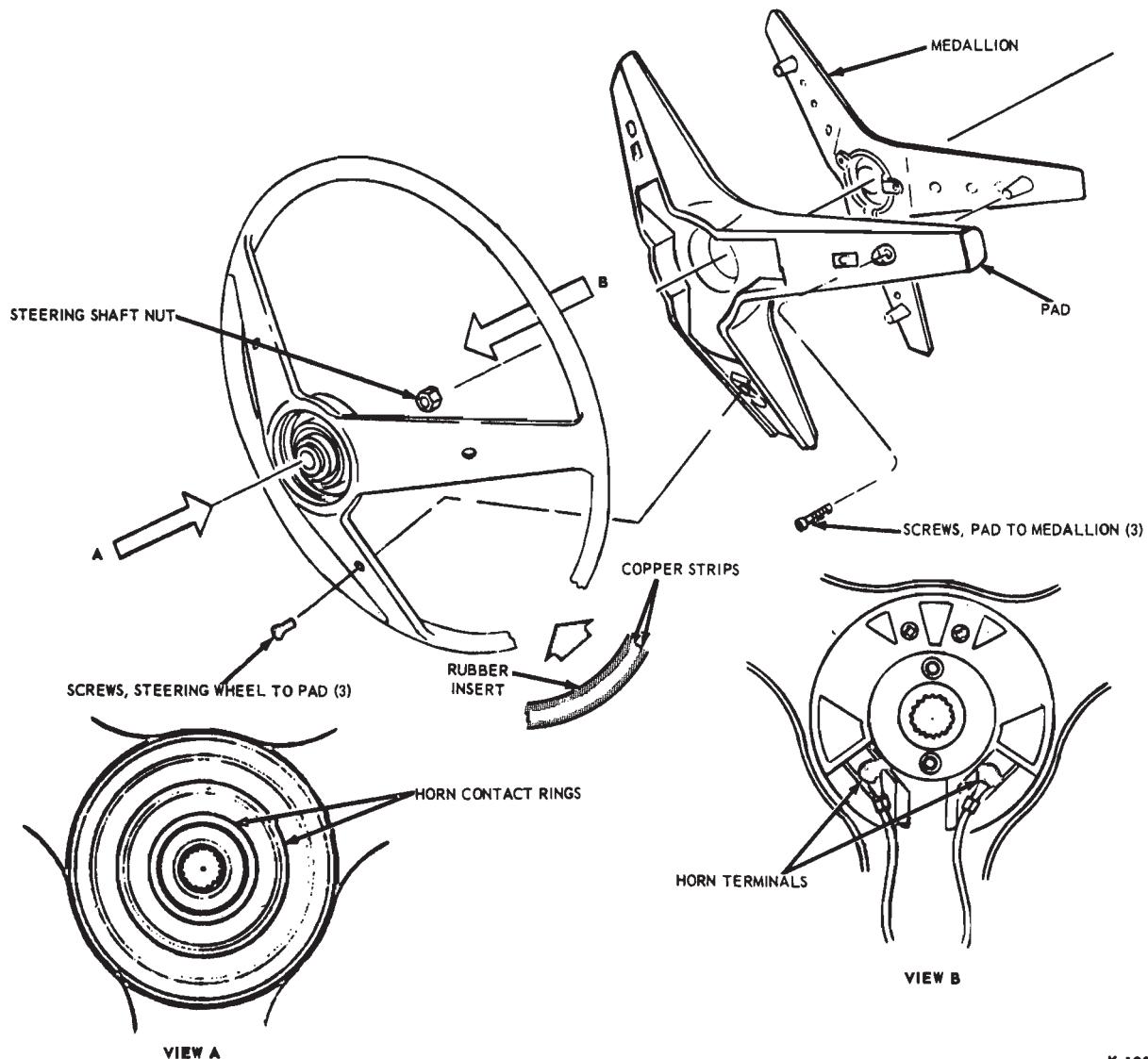


FIG. 6—Rim-Blow Horn—Three-Spoke Shown, Two-Spoke Typical

CONTINENTAL MARK III**DESCRIPTION AND OPERATION**

Three horns are used. A 4-inch diameter high pitch horn is mounted on the left apron extension in the engine compartment. A 4-inch diameter low pitch horn is mounted on the right outer grille support, directly behind the right parking light. A 4 1/2-inch extra-low pitch horn is mounted on the left grille outer support, directly behind the left parking light.

The horn switch at the steering wheel closes the circuit to the horns without the use of a relay.

REMOVAL AND INSTALLATION

The high pitch horn is mounted on the left apron extension below the headlight vacuum system reservoir and windshield washer reservoir. To remove the horn, remove the screw retaining the horn bracket to the apron and disconnect the wire connector. To install, place the high pitch horn in position and install the retaining screw and washer. Connect the horn wire connector.

Both low pitch horns are mounted on the grille outer supports, directly behind the parking lights. The 4-inch diameter horn is mounted on the right side of the car, and the 4 1/2-inch diameter horn is mounted on the left side. The bracket screw for either low pitch horn can be reached from the headlight area. The horn must be removed and the horn wire disconnected from underneath the car.

HORN TEST—ALL VEHICLE LINES

The only test necessary on the horns is for current draw.

Connect a voltmeter and ammeter to the horn and to a voltage supply as shown in Fig. 5. The normal current draw for the horns at 12 volts is 4.0-5.0 amperes.

HORN ADJUSTMENT—ALL VEHICLE LINES

The current is adjusted by changing the contact tension. Connect the horn as shown in Fig. 5. Turn the self-locking adjusting screw until the current is within the limits for the horn being adjusted.

HORN SWITCH (RING)—FALCON**DESCRIPTION AND OPERATION**

In normal position the horn ring is held away from the electrical contacts by a spring. Pushing the horn ring in against the spring completes the circuit between the horn ring contacts and blows the horn.

REMOVAL AND INSTALLATION

1. Disconnect the battery ground cable.
2. Remove the two screws retaining the steering column pad and remove the pad.
3. Push down and turn the horn ring and remove the horn ring and spring.
4. Position the spring to the horn ring. Position the horn ring to the steering column, push down and turn the horn ring to lock the ring in place.
5. Position the steering column pad to the steering column and install the retaining screws.
6. Connect the battery ground cable.

TWO AND THREE-SPOKE, RIM-BLOW HORNS—CONTINENTAL MARK III; LINCOLN CONTINENTAL AND ALL SPEED CONTROL EQUIPPED VEHICLES**DESCRIPTION AND OPERATION**

The Continental Mark III and Lincoln Continental are equipped with the three-spoke, rim-blow horn. All speed control equipped vehicles use a two-spoke rim-blow horn.

Instead of the conventional horn button at the steering wheel hub, a rubber insert containing two copper strips is inserted around the inner diameter of the wheel (Fig. 6). The two horn terminals are mounted at the horn contact rings. One ring connects to power; the other connects to the horns, the copper strips in the wheel are connected through lead wires, one to the hot terminal, the other to the horn terminal. Depressing the rubber insert at any point around the steering wheel will bring the copper strips into contact and thereby close the circuit causing the horns to blow.

REMOVAL AND INSTALLATION

The rubber insert and copper strip assembly is not replaceable. Therefore, if a new insert assembly is required, the entire steering wheel will have to be replaced.

Remove the pad from the steering wheel assembly (three attaching screws), and then remove the medallion from the pad (Fig. 6). After removing the retaining nut, the steering wheel can be removed from the steering column shaft with a wheel puller.

When installing the new steering wheel, use a new self-locking retaining nut and torque it to 30-40 ft-lbs.

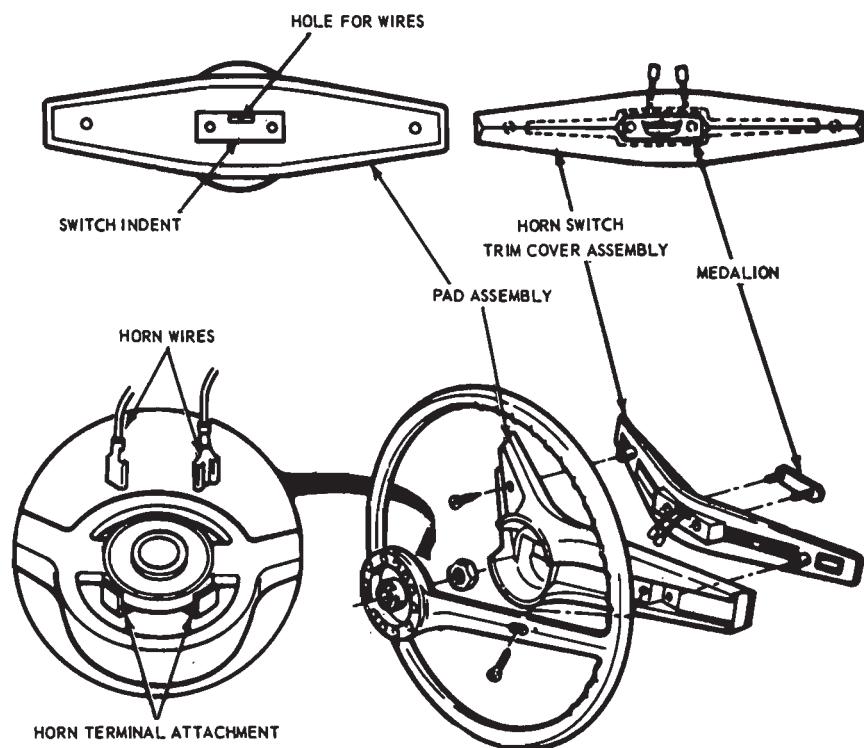
HORN-SWITCH—ALL EXCEPT FALCON, CONTINENTAL MARK III, LINCOLN CONTINENTAL AND SPEED CONTROL EQUIPPED VEHICLES**DESCRIPTION AND OPERATION**

All these car lines use a two-spoke steering wheel with a pressure sensitive horn switch in the steering wheel trim cover (Fig. 7).

The new pressure switch system consists of a plastic switch embedded in the length of the trim pad with two wires attaching to the horn terminals in the same manner as the rim-blow horn. Diagnosis of the horn will not change with this system. If the switch needs to be replaced, the entire horn switch/trim cover assembly will have to be replaced.

REMOVAL AND INSTALLATION

Remove the retaining screw from the underside of each spoke and lift off the pad, switch/trim cover and medallion as an assembly. Disconnect the horn wires from the terminals. If the switch needs replacement, separate the medallion and the horn switch/trim cover assembly from the pad (Fig. 7). Install a new horn switch/trim cover assembly to the pad with the switch wires going through the hole at the top of the switch indent in the pad. Install the medallion to the switch/trim cover and pad assembly. Connect the two-wire (push on) connectors to the terminals and install the entire assembly to the steering wheel with the wire hole in the indent to the top. Install the retaining screw from the underside of each spoke.



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FIG. 7—Typical Two-Spoke Wheel and Horn Switch

PART 32-05 Automatic Headlight Dimmer

COMPONENT INDEX Applies Only to Models Indicated	Lincoln- Continental	Continental- Mark III	COMPONENT INDEX Applies Only to Models Indicated	Lincoln- Continental	Continental- Mark III
DIMMER SWITCH Description and Operation	05-01	05-01	POWER RELAY Description and Operation	05-01	05-01
Removal and Installation	05-06	05-06	Removal and Installation	05-06	05-06
Testing	05-02	05-02	Testing	05-02	05-02
DRIVER SENSITIVITY CONTROL Description and Operation	05-01	05-01	SENSOR-AMPLIFIER Adjustments	05-05	05-05
Removal and Installation	05-07	05-07	Description and Operation	05-01	05-01
Testing	05-02	05-02	Removal and Installation	05-05	05-05
			Testing	05-02	05-02

A page number indicates that the item is for the vehicle(s) listed at the head of the column.

1 DESCRIPTION AND OPERATION

The automatic headlight dimmer is a driver-operated electronic device which automatically switches the headlights from high to low beam in response to light from an approaching vehicle or light from the taillights of a vehicle being overtaken.

Major components of the system are: a sensor-amplifier unit, a power relay, a foot switch, a driver sensitivity control, and an interconnecting wire harness.

The sensor-amplifier unit combines a light-sensing optical device and a transistorized amplifier into one unit with sufficient power to operate a power relay for switching headlight beams. The Continental Mark III sensor-amplifier unit is mounted on the cowl top panel so that the lens has an unobstructed view of approaching headlights. Proper operation requires that the unit be properly aimed vertically and horizontally. The Lincoln Continental sensor-amplifier unit and mounting bracket assembly is located in the engine compartment attached to the left side of the radiator support assembly. A pre-calibrated level assembly is attached as a part of the sensor-amplifier unit for setting the correct vertical aim. The unit is adjusted for sensitivity at the factory and then completely

sealed by filling the interior of the metal case with a moisture-proof epoxy material. The epoxy forms a capsule around all the interior parts and prohibits access to factory sensitivity adjustments or other interior parts.

The power relay is a dust sealed, single pole, double throw, 12 V.D.C. unit which provides the heavy duty contacts for switching the headlight beams. The upper beam position is the normally closed position. The power relay also contains a diode for damping purposes to protect the sensor-amplifier. Observe proper polarity when connecting, to prevent burn-out of the diode and subsequent damage to the sensor-amplifier.

The foot switch is a special dimmer-override type that replaces the standard foot dimmer switch. One position provides automatic control of the headlight beams and the other position is the lower beam. It also contains an override section for obtaining an overriding high beam when in the automatic position. The override section functions as follows: With the foot switch in the automatic position, a slight downward pressure on the switch provides upper beam regardless of the amount of light on the sensor-amplifier lens. This arrangement per-

mits signaling an approaching vehicle if it fails to switch to lower beam or as a passing signal to a vehicle being overtaken. It also provides a simple test for finding the automatic position of the foot switch.

The driver sensitivity control is the ring knob on the headlight switch. This allows the driver to adjust the sensitivity of the system to the surrounding light. With the control knob positioned at the center of its travel, the sensitivity will closely approximate factory adjustment. Rotating the knob clockwise increases sensitivity and the headlights will switch to the lower beam when an approaching car is farther away. Rotating the knob counterclockwise decreases the sensitivity, allowing an approaching car to come nearer before the headlight switching occurs. If the control is rotated to the full counterclockwise position, manual operation of the headlight beams with the foot dimmer switch is provided.

An in-line 4 ampere (SFE-4) fuse is incorporated into the wire harness. If this fuse should blow, the circuit will revert to manual control of the headlight beams by means of the foot switch. Removing the fuse will also revert the system to manual control.

2 TESTING

All components of the automatic headlight dimmer should hold their factory adjustments indefinitely. However, an incorrect vertical aim adjustment, loose or incorrect wiring connections or even misunderstanding of the operation of the unit may lead an owner to believe an adjustment or part replacement is necessary.

The following checks should be performed in sequence to determine the cause and correction of trouble and to eliminate unnecessary service work. This unit is transistorized and does not require a warm-up time.

With the vehicle in a lighted area, check the system as follows:

1. Check the position of the driver sensitivity control knob. If it is rotated to the full counterclockwise position, check with the owner to be sure he understands the operation of the unit.

2. Operate the engine at fast idle.

3. Set the driver sensitivity control knob at the approximate center of its rotation.

4. Turn the light switch on. The headlights should remain on the lower beam in both positions of the foot

switch. If so, proceed to step 5. If not, perform the following checks:

- a. Check for a loose connection at the foot switch, power relay, connector near driver sensitivity control, or in-line connector between the sensor-amplifier cable and the interconnecting wire harness. Also check the sensor-amplifier ground wire for proper contact (Continental Mark III only).

- b. Disconnect the red wire (override) from the foot switch (Fig. 1). If the lower beam is obtained in both positions of the foot switch, replace the foot switch.

- c. Disconnect the sensor-amplifier cable at the in-line connector. Fabricate a test lamp from a No. 53 bulb and 2 pieces of wire. Ground one test lamp lead and touch the other to the yellow terminal in the female connector. The test lamp should light. If not, check for a blown fuse or a loose connection at the driver sensitivity control connector or power relay.

- d. Connect one test lamp lead to battery voltage and touch the other lead to the white terminal in the connector. Rotating the driver sensitivity

control knob completely counterclockwise should cause the bulb to light. If not, check for a loose connection at the driver sensitivity control connector, a poor solder connection at the driver sensitivity control, or a damaged driver sensitivity control (open circuit).

- e. Connect one test lamp lead to battery voltage and touch the other lead to the black terminal in the connector. Operate the foot switch two or three times. The test bulb should light in one position of the foot switch and the headlights should be on lower beam for both positions of the foot switch. If not, check for loose connections at the foot switch or power relay, a poor ground at the power relay, or a damaged foot switch or power relay.

If the problem was not found in step 4, the sensor amplifier is not functioning properly and should be replaced.

5. Place the foot switch in the automatic position and depress slightly. The headlights should switch to the upper beam. If so, proceed to step

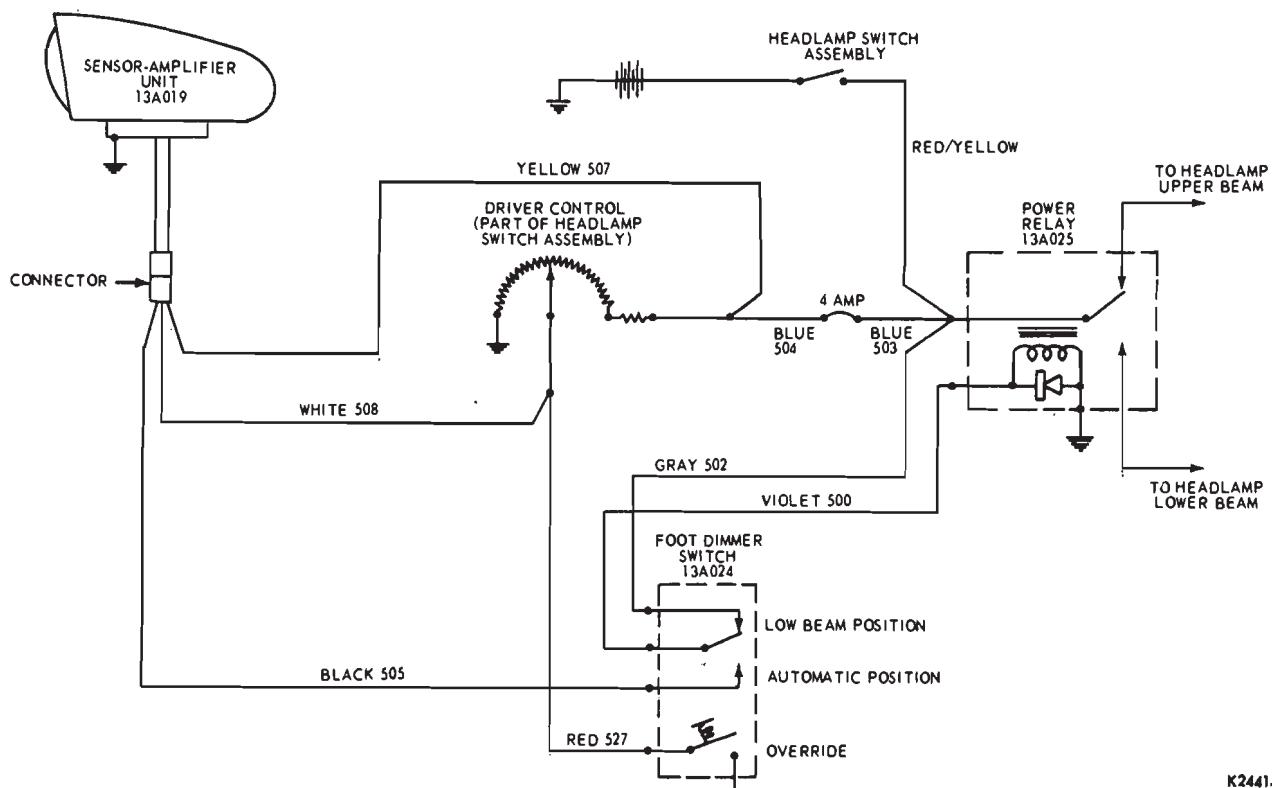


FIG. 1—Automatic Headlamp Dimmer Electrical Wiring Diagram

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6. If not, perform the following checks:

a. Check for a disconnected red wire at the foot switch.

b. Disconnect the red wire from the foot switch and ground it to the vehicle body. If the upper beam is obtained, replace the foot switch. If not, connect the wire to the foot switch and check the continuity of the red wire to the 2-way connector near the driver sensitivity control.

c. Complete continuity of the red wire through the white wire can be checked by disconnecting the sensor-amplifier cable from the interconnecting harness at the in-line connector. Using a test lamp (No. 53 bulb), connect one lead to battery voltage and touch the other to the white terminal in the in-line connector. Push down slightly on the foot switch and the bulb should light. If not, check the continuity from the in-line connector to the foot switch.

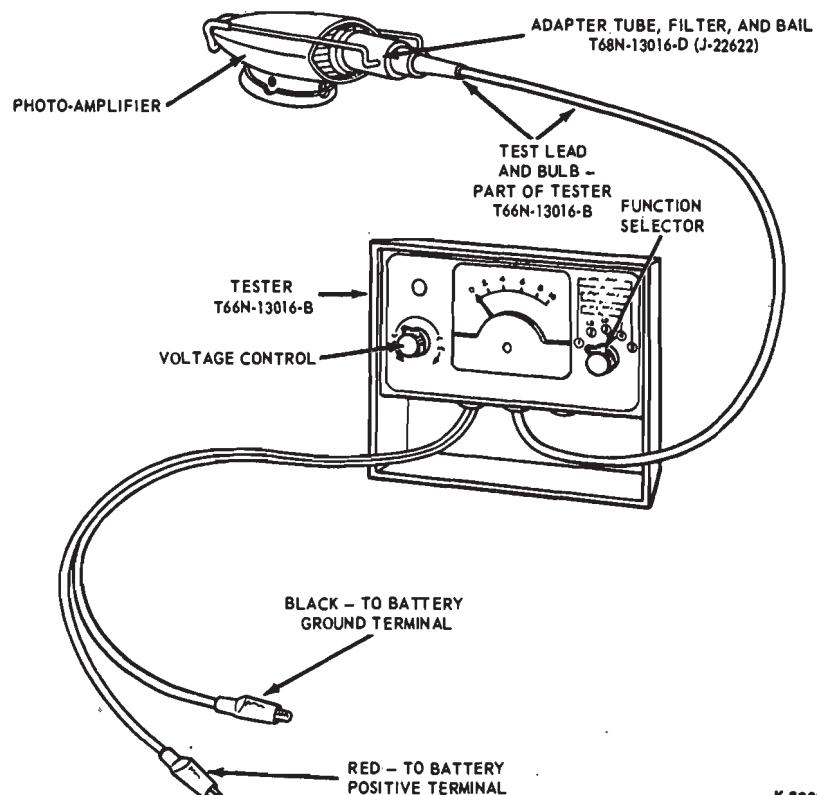
6. Place the foot switch in the automatic position and cover the sensor-amplifier lens with a black cloth. The headlights should switch to the upper beam. If so, proceed to step 7. If not, disconnect the sensor-amplifier at the in-line connector. If the headlights switch to the upper beam, replace the sensor-amplifier unit.

7. With the headlights on automatic lower beam, rotate the driver sensitivity control all-the-way counter-clockwise. The headlights should switch to the upper beam. If so, proceed to step 8. If not, check the driver sensitivity control for a poor connection to ground.

8. If the system responded to steps 4 thru 7 without failure, the unit is functioning properly and all that remains to be checked is the aiming and sensitivity (Section 3).

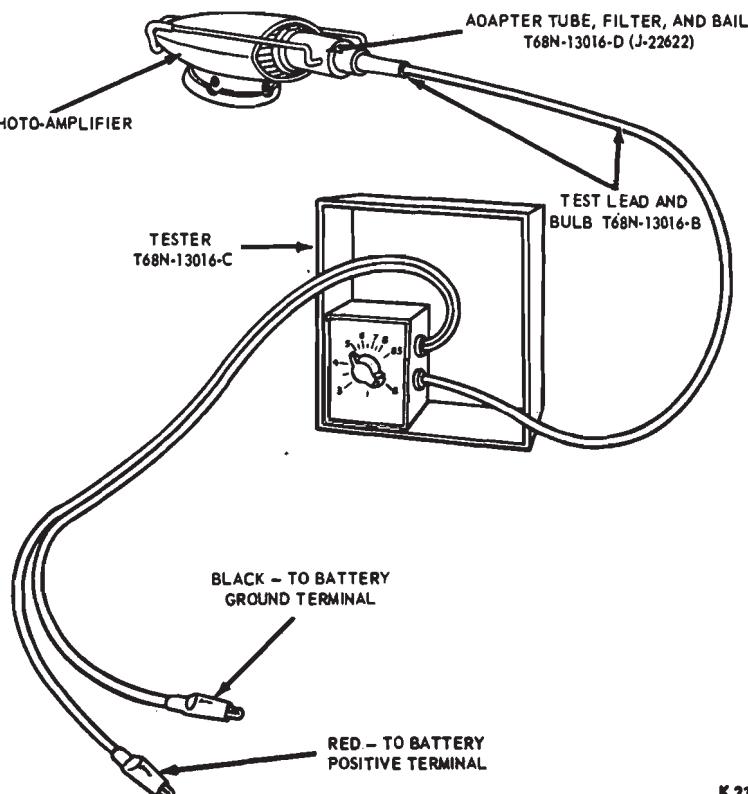
DIM AND HOLD SENSITIVITY TEST—CONTINENTAL MARK III

The individual sensitivity controls for Dim and Hold are located in the sensor-amplifier unit and are adjusted and sealed at the factory. However, a sensitivity check can be made on the Continental Mark III to determine if the sensitivity is within the limits of the driver sensitivity control to provide the driver with at least a minimum acceptable Dim and Hold sensitivity. This will prevent unnecessary replacement of the sensor-amplifier unit and also will verify that the unit is working properly.



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FIG. 2—Continental Mark III Dim and Hold Sensitivity Test Connections—Tester T66N-13016-B



K 2304-A

FIG. 3—Continental Mark III Dim and Hold Sensitivity Test Connections—Tester T68N-13016-C

PREPARATION FOR TEST

1. Use an adapter (Tool T68N-13016-D) with the tester to supply a calibrated light source for the test. A filter is glued into the adapter to reduce light to a level consistent with the headlight dimmer sensitivity. The test bulb from the tester plugs into the rear of the adapter. If the bulb burns out, replace it with a No. 53 bulb. Be sure the bulb filament is positioned fairly straight up so that a minimum of the side of the filament is exposed to the end of the bulb. The end of the bulb should be approximately flush with the end of the rubber sleeve.

2. Install the tester test bulb assembly into the small diameter hole in the rear of the adapter head. Push the bulb and rubber sleeve into the adapter until they are against the adapter head inner stop.

3. Position the adapter on the sensor-amplifier as shown in Figs. 2 and 3. Be sure the adapter is seated snugly around the lens and the bail is snapped tightly into position.

4. Connect the long leads from the tester to the battery, the red lead to

the positive terminal and the black lead to the ground terminal.

5. Cover the sensor-amplifier, adapter, and test bulb with a black cloth.

6. Rotate the tester function selector to the No. 1 position.

7. Rotate the driver sensitivity control (on headlight switch) counterclockwise to the OFF position.

8. Turn the headlights ON and operate the engine at fast idle. The headlights should be on the upper beam.

TEST PROCEDURE

1. Adjust the tester voltage control until the meter reads 7 volts.

2. Slowly rotate the driver sensitivity control knob clockwise just to the point where the headlights switch to the lower beam.

3. Check the accuracy of the driver sensitivity control by rotating the tester voltage control knob counterclockwise until the headlights switch to the upper beam. Then, slowly rotate the tester voltage control knob clockwise until the headlights switch to the

lower beam. The voltmeter should indicate between 6.5 and 7 volts.

4. If the voltage reading does not agree, repeat steps 1, 2 and 3.

5. Slowly rotate the sensitivity tester voltage control knob counterclockwise just to the point where the headlights switch to the upper beam. The control knob pointer should register from 1.5 to 2.5 volts less than the reading obtained from switching to the lower beam in step 3.

6. If this minimum dim and hold sensitivity can be obtained at any position of the driver sensitivity control knob rotation range, the unit is acceptable for sensitivity. If the dim (switching to lower beam) cannot be adjusted (step 2), replace the sensor-amplifier unit. If the dim and hold sensitivity readings are close together (approximately 1/2 to 3/4 volts apart), check for an open driver control circuit to ground. If OK, replace the sensor-amplifier unit.

7. Turn the headlights and engine OFF. Disconnect the tester and remove the adapter from the sensor-amplifier. Connect any wires that were disconnected during the test.

3 ADJUSTMENTS

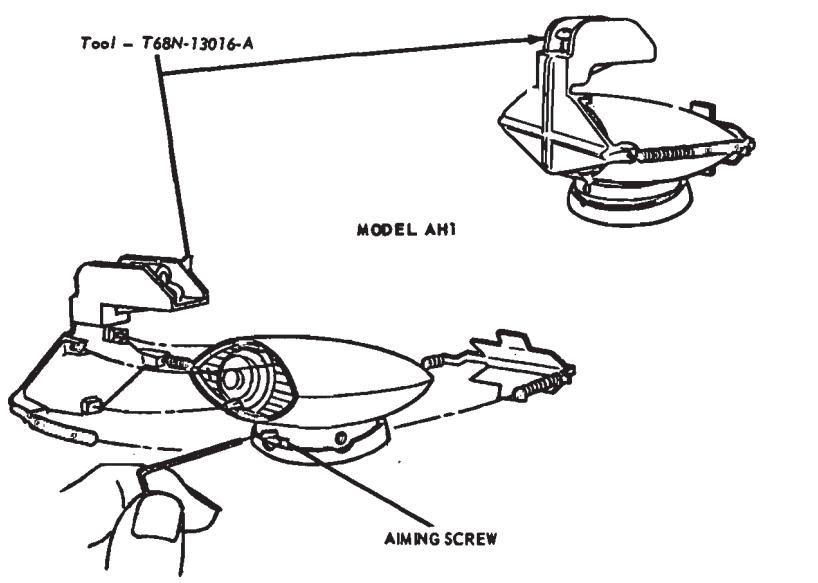


FIG. 4—Sensor-Amplifier Aiming Adjustment—Continental Mark III

HORIZONTAL AIMING ADJUSTMENT

The sensor-amplifier unit must be aimed straight ahead in the horizontal plane for proper performance. If necessary to re-aim horizontally, the unit must be removed and the mounting holes (Continental Mark III only) opened up to allow repositioning.

VERTICAL AIMING ADJUSTMENT

Accurate vertical aim is essential to proper performance. If the sensor amplifier is aimed too low, reflected road light from the vehicle's own headlights can cause the unit to hold the headlights on low beam. The unit must be aimed as low as possible to provide maximum tolerance for vehicle loading and weight distribution.

The aiming procedure should be rechecked on new vehicles that have been driven 2,000 miles.

1. Sensor-amplifier vertical aiming should be performed with the vehicle unloaded, the trunk empty except for

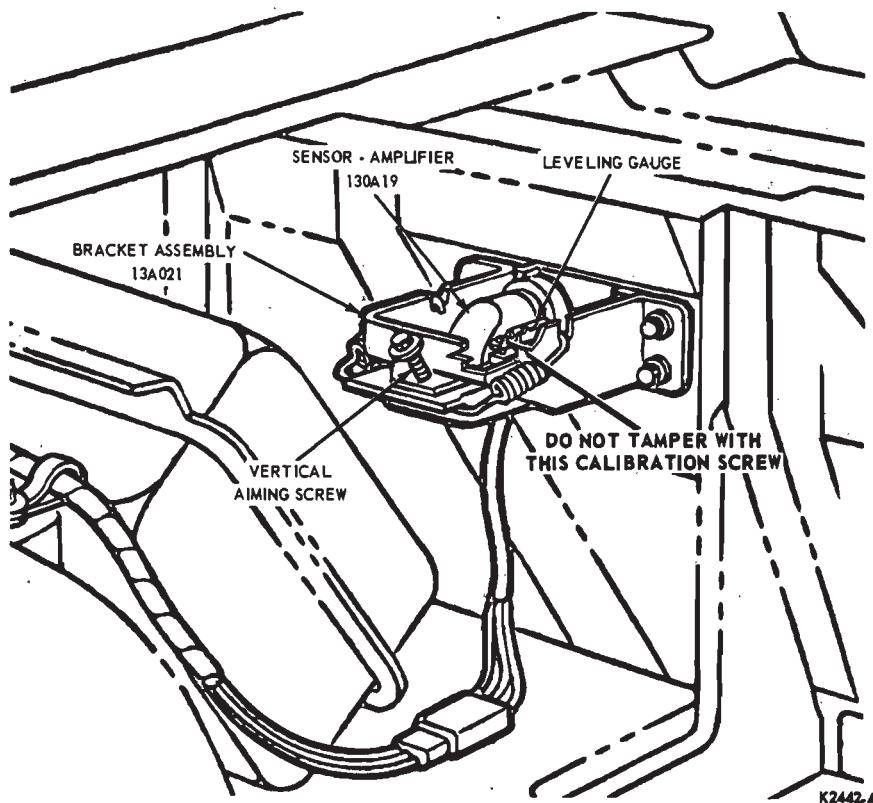


FIG. 5—Vertical Aim Adjustment—Lincoln Continental

the spare tire and jack assembly, gas tank at least half full, and the tires at

the correct air pressure(s).

4 REMOVAL AND INSTALLATION

If the automatic headlight dimmer malfunctions and cannot be removed for repair immediately, manual operation of the headlights may be obtained at the foot dimmer switch, in most cases, by removing the fuse from the fuse holder. The fuse holder is located in the wiring harness near the headlight switch.

Should the car have to be driven with the sensor-amplifier unit removed, manual headlight beam operation with the foot dimmer switch will be obtained. If both the sensor-amplifier unit and the power relay are removed, manual operation with the foot dimmer switch may be obtained by replacing the over-ride type foot dimmer switch with a standard foot dimmer switch, and plugging the standard car wiring into it.

The driver sensitivity control (available to the driver at the light switch), will provide any adjustment require-

ment normally needed. However, when a sensor-amplifier unit is replaced, it will be necessary to readjust the vertical aim as described in Vertical Aiming Adjustment in Section 3.

SENSOR-AMPLIFIER—LINCOLN CONTINENTAL

REMOVAL

1. Disconnect the ground cable from the battery.
2. Disconnect the harness at the rear of the sensor-amplifier unit (Fig. 6). Do not pull on the cable sheathing, otherwise the leads could be damaged.
3. Remove the three sensor-amplifier and bracket assembly mounting screws and lockwashers.
4. Remove the sensor-amplifier and mounting bracket from the vehicle.

INSTALLATION

1. Position the sensor-amplifier and mounting bracket assembly into the opening on the left side of the radiator support (Fig. 6).
2. Install the three bracket assembly mounting screws and lockwashers.
3. Connect the harness connector to the harness at the rear of the sensor-amplifier unit.
4. Connect the battery cable.
5. Test the unit for proper operation. If necessary adjust the vertical aiming as described in the Adjustment Section.

SENSOR-AMPLIFIER—CONTINENTAL MARK III

REMOVAL

1. Disconnect the battery ground

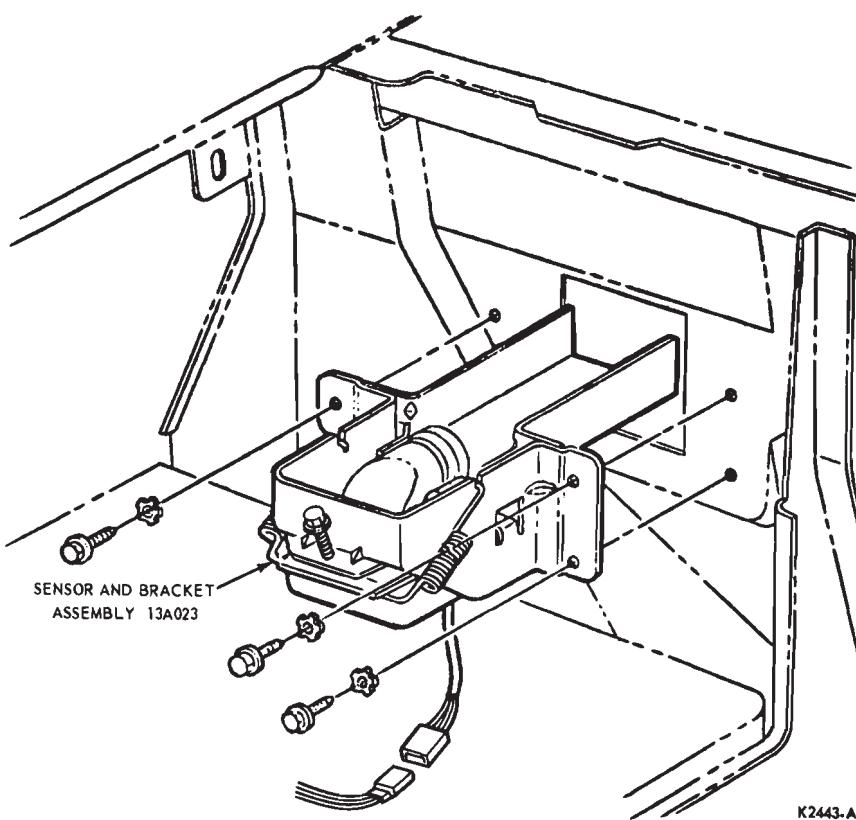


FIG. 6—Sensor-Amplifier Installation—Lincoln Continental

cable.

2. Disconnect the sensor-amplifier wires at the connectors located under the hood at the dash panel (Fig. 7).

3. Remove the dash panel ground lug attaching screw.

4. Remove the wire harness from the harness retainer on the dash panel.

5. Remove the screw pin attaching the sensor-amplifier to the bracket (Fig. 7). Separate the sensor-amplifier from the bracket.

6. Remove the nuts, lockwashers and attaching screws securing the bracket and ground lug to the cowl top panel.

7. Remove the harness clip attaching screw.

8. Carefully pull the sensor-amplifier wire harness through the dash panel grommet.

9. Remove the sensor-amplifier, bracket, gasket, and wires from the cowl top panel. Do not remove the sensor-amplifier from its mounting bracket (ground) when the feed wires are still connected to the system.

INSTALLATION

1. Insert the sensor-amplifier wires through the bracket and gasket.

2. Position the sensor-amplifier to

the cowl top panel and route the wires through the dash panel grommet, into the engine compartment (Fig. 7).

3. Install the two sensor-amplifier bracket attaching screws, washers, ground lug and nuts.

4. Position the sensor-amplifier and spring to the bracket, and install the screw pin.

5. Install the sensor-amplifier wire harness clip and attaching screw.

6. Connect the wires at the connectors in the engine compartment.

7. Install the dash panel ground lug attaching screw.

8. Insert the wire harness into the harness retainer.

9. Connect the battery ground cable.

10. Adjust the aim of the phototransistor (Section 3), and check the operation of the system.

FOOT DIMMER SWITCH

REMOVAL

1. Disconnect the ground cable from the battery.

2. Position the left side of the floor mat back away from the area of the foot dimmer switch.

3. Remove the two screws attach-

ing the foot dimmer switch to the floor pan. Lift the foot dimmer switch from the floor pan (Figs. 7 or 8).

4. Disconnect the plug connectors from the foot dimmer switch.

Should installation of a standard foot dimmer switch be necessary, remove the left side cowl trim panel (Continental Mark III) and connect the car headlight wiring harness to the standard foot dimmer switch.

INSTALLATION

1. Connect the plug connectors to the foot dimmer switch.

2. Position the foot dimmer switch on the floor pan, and install the two attaching screws.

3. Position the floor mat in the area of the foot dimmer switch.

4. Connect the ground cable to the battery.

POWER RELAY—LINCOLN CONTINENTAL

REMOVAL

1. Disconnect the battery ground cable.

2. Disconnect the two plug connectors from the relay (Fig. 8).

3. Remove the two attaching screws securing the relay to the brake pedal support and remove the relay.

INSTALLATION

1. Position the power relay to the brake pedal support (Fig. 8). The terminals of the relay must point toward the front of the vehicle. Install the two attaching screws.

2. Connect the two plug connectors to the power relay.

3. Connect the battery ground cable.

4. Test the system for proper operation.

POWER RELAY—CONTINENTAL MARK III

REMOVAL

1. Disconnect the battery ground cable.

2. Remove seven screws attaching the lower finish panel to the lower side of the instrument panel.

3. Disconnect the wire connectors from the power relay.

4. Remove two screws attaching the power relay to the brake pedal support (Fig. 9), and remove the relay.

INSTALLATION

1. Position the relay to the brake pedal support as shown in Fig. 9 and install the attaching screws.
2. Connect the wire connectors to the relay.
3. Install the instrument panel lower finish panel, and connect the battery ground cable.

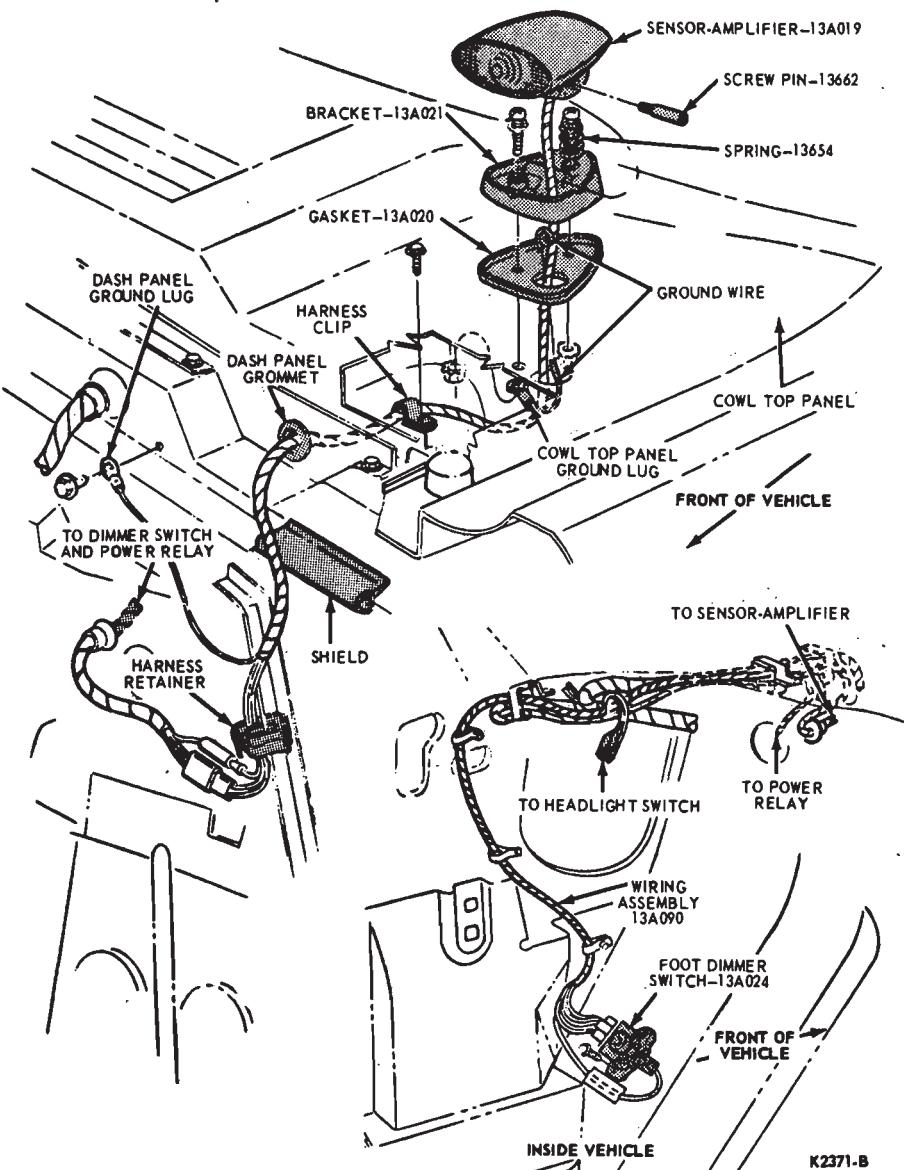
DRIVER SENSITIVITY CONTROL

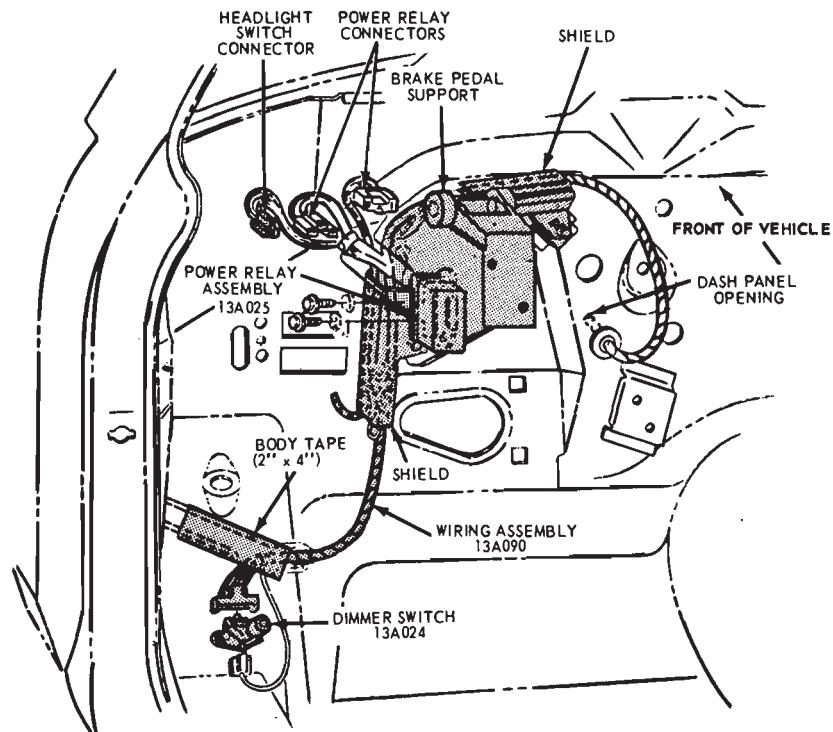
REMOVAL

1. Disconnect the battery ground cable.
2. Remove seven screws attaching the lower finish panel to the lower side of the instrument panel (Continental Mark III).
3. Remove the control knob and shaft from the headlight switch. This can be accomplished by pressing the release button, on the underside of the switch, with the shaft pulled all-the-way out, and pulling on the knob.
4. Remove the bezel and nut from the headlight switch (Fig. 10 or 11).
5. Remove two screws attaching the headlight switch to the instrument panel (Fig. 10) or loosen the two attaching screws (Fig. 11).
6. Remove the switch from the instrument panel. Disconnect the wire multiple connector, plug connector and vacuum hoses from the switch.

INSTALLATION

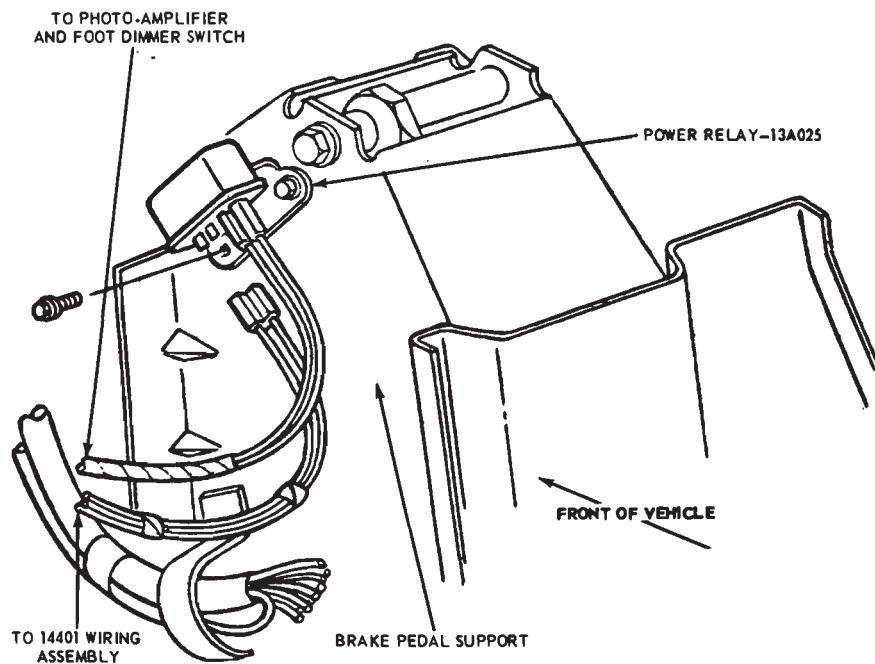
1. Connect the plug connector and wire multiple connector to the headlight switch.
2. Connect the vacuum hoses to the switch (Fig. 10 or 11).
3. Position the headlight switch to the instrument panel, and install (Fig. 10) or tighten (Fig. 11) the two attaching screws.
4. Install the nut, bezel and the control knob and shaft.
5. Install the instrument panel lower finish panel (Continental Mark III). Connect the battery ground cable.





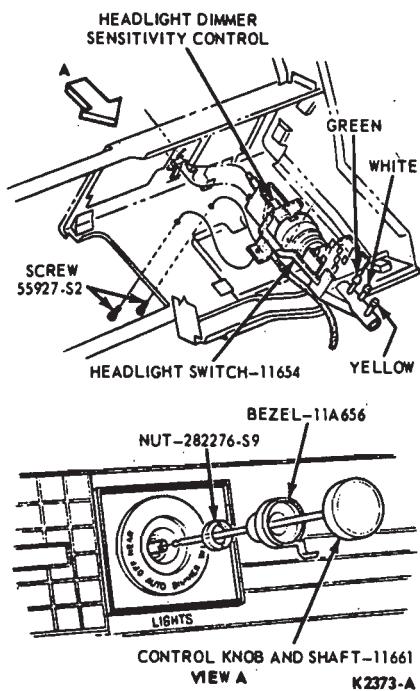
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FIG. 8—Dimmer Switch, Power Relay and Harness Connections—Lincoln Continental

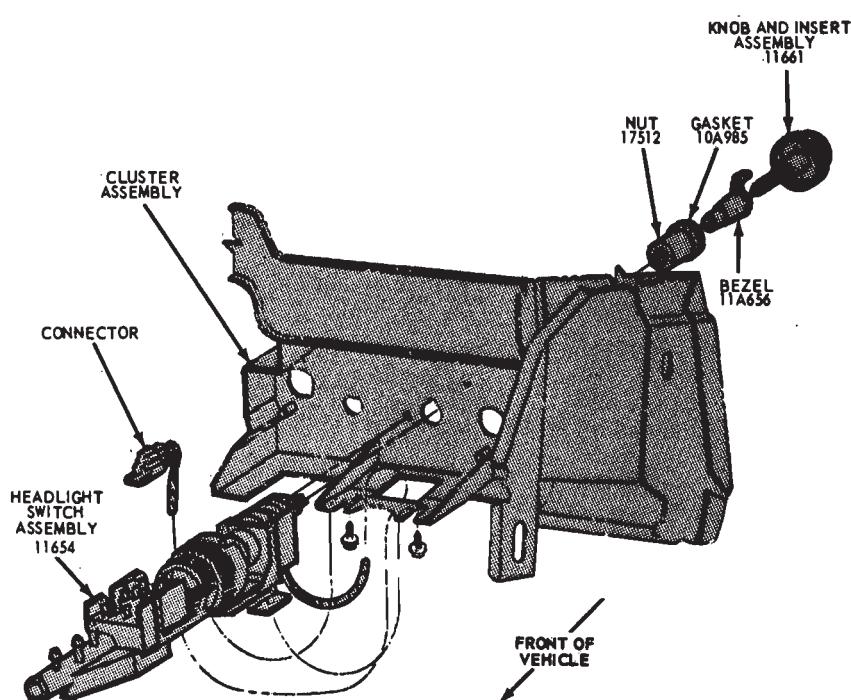


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FIG. 9—Power Relay Installation—Continental Mark III



**FIG. 10—Headlight Switch and
Driver Sensitivity Control
Installation—Continental Mark III**



**FIG. 11—Headlight Switch and Driver Sensitivity Control
Installation—Lincoln Continental**

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